

Street food quality

A matter of neatness and trust

A qualitative study of local practices and perceptions of food quality, food hygiene and food safety in urban Kumasi, Ghana.



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Abstract

Objectives: Street food has been identified as of low hygienic quality and hence to constitute a public health threat to many consumers depending on affordable street foods in urban areas of Africa. The aim of this study was to investigate notions of street food quality among vendors and consumers in Kumasi, Ghana, and to find out how these relate to practices and perceptions of hygiene and street food safety.

Method: Qualitative data was collected during a 3 months field stay in Kumasi. Extensive participant observations, informal as well as formal interviews were conducted with 8 street food vendors and their staffs. The main issues investigated related to food safety practices and perceptions, vendor-customer interactions and general conditions and challenges for street food vending. Semi-structured interviews were carried out with 27 street food customers and two focus group discussions were carried out with male and female street food consumers to gain in-depth understanding of consumers' perceptions and attitudes towards street food quality, food safety and hygiene. Several markets, urban farms, vendors' networks and other relevant locations were visited in and around Kumasi and key-informants from town authorities, research institutions and food corporations were consulted.

Analysis:

The process of analysis largely followed hermeneutic interpretation principles first categorising data into units and later analysing it according to a suitable theoretical model. Data is thus presented and analysed using a multi-dimensional model with the five core dimensions of social, nutritional, hygienic, aesthetic and functional food quality.

Findings:

Notions of food quality among consumers and vendors are highly subjective and multidimensional and include bio-medical concerns of food safety and hygiene as well as social, cultural, aesthetic and moral factors. Functional parameters such as price, availability and accessibility were found to be particularly strong and often overruling concerns of food hygiene. But vendors and consumers are also highly concerned with *neatness*, which includes aspects of cleanliness, order, aesthetic appearance as well as neat manners during social interactions. Trust in a known vendor also seems to replace many customers' concerns of hygiene and food safety. But hygiene related practices are often not extended to include the in-visible back stages of food vending and the consequence is apparent lack of important food safety practices during food preparations (e.g. hand washing, keeping kitchen premises clean, cleaning vegetables). Hence, hygiene practices are also strongly determined by everyday concerns and agendas, prioritising effective food preparations etc. Future hygiene promotion should target the "in-visible" sources of food contamination and strengthening motivating networks for vendors to gain and internalize such food safety knowledge seems like a viable strategy in Kumasi. This can be brought into action in fruitful partnerships with food Cooperation's already hosting wide ranging networks of food vendors but vendors' networks might also turn out to be a useful self-regulatory and participatory control mechanism for the street food sector – offering an important supplement to the restrictive control strategies exercised by town authorities today.

Acronyms

CP: Challenge Program

EHI: Environmental Health Inspectors

EHO: Environmental Health Officers

EHP: Environmental Health Project

FAO: Food and Agriculture Organisation of The United Nations

FGD: Focus Group Discussion

KMA: Kumasi Metropolitan Assembly

KNUST: Kwame Nkrumah University of Technology and Science (In Kumasi, Ghana)

IFPRI: International Food Policy Research Institute

IWMI: International Water Management Institute

MAFFAG: The Maggi Fast Food Association of Ghana – Ashanti Region

NRI: Natural Resource Institute

WHO: World Health Organisation

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Og tusind tak til Anders og Jens!

Introduction: Understanding multidimensional aspects of street food quality

Vending of street food in urban areas is a growing and world wide phenomenon and today street foods are important sources of daily foods for massive urban populations – not least in African towns. But food poisoning, food borne diseases and food safety have been declared a major public health concern by international health agencies and street foods have in many studies been associated with microbiological contamination and low hygienic standards (WHO 2006). Hence, street food vendors are of massive importance for public health since they alone have influence on the health of thousands of people every day.

This study will concentrate on street food vendors and consumers in Kumasi, the second largest town in Ghana, West Africa. Several studies from the Ghanaian capital Accra have already confirmed that the street food sector is facing serious challenges in maintaining hygiene and safety of foods (Mensah 1999, 2001, King 2000, Tomlins 2002) and with more than 10.000 street vendors in Kumasi and the town rapidly expanding Kumasi is now facing the same challenges. Studies conducted in Kumasi under IWMI have also identified vegetables prepared by street food vendors to be highly contaminated with faecal material and harmful micro-organisms (Amoah et al. 2006) and several related risk practices of food handling have been identified by Henseler (2005) and Olsen (2005).

However, if we in future wish to effectively encourage vendors to improve street food safety and thereby minimise the dangers of food borne diseases, it is vital to gain in-sight into the perceptions which form practices and attitudes towards food safety and hygiene. This thesis will therefore engage in understanding such perceptions among vendors and consumers in Kumasi and investigate how these are linked to actual practices and decision-making when preparing and vending street foods and choosing a vendor.

As I started investigating perceptions it became evident that concepts of food as well as hygiene, contamination and health risks are deeply imbedded in the social and cultural context and everyday life practices. Biomedical concepts of contamination and health risks are therefore not adequate to capture the full complexity of behaviours and attitudes. Cultural and anthropological theories of contamination by Mary Douglas (1956) and Edward Green (1999) are therefore relevant to explain the variety of beliefs and attitudes towards safe and unsafe food. Hygiene perceptions and practices also turned out to be part of a complex system of interactions between vendors and consumers, particularly concerned with appearance and presentation. The impression management theory of Goffman will therefore add to understanding such behaviour patterns. Finally, I found factors such as demand and trust to be strong values and this thesis therefore takes its point of departure in realizing that perceptions of street foods quality are multi-dimensional– dependent upon far more than hygiene and health concerns.

Study objectives

Instead of narrowly focusing on hygiene and food safety, I therefore choose to focus on a wider concept of *Food Quality*. This concept embraces hygienic as well as social, cultural, nutritional and practical aspects of food quality. To make use of findings from this study the last part of the thesis will concentrate on outlining potential target groups and strategies for future hygiene promotion in the street food sector.

Therefore, the main objectives of this thesis are:

- 1) to determine the multiple factors which influence vendors' and consumers' street food practices and perceptions towards food quality in Kumasi and
- 2) to find out how these relate to safe and unsafe food practices.
- 3) to identify and recommend possible future hygiene promotion strategies in the street food sector.

The main objectives of this study will be obtained by using various approaches:

- to investigate in-depth the practices by street food vendors and their customers in urban Kumasi, especially practices related to food hygiene and food safety.
- to explore the perceptions, attitudes and awareness of street food hygiene and food contamination among these street food vendors and their customers.
- to explore factors in the seller-customer relation and interactions possibly influencing practices of food hygiene and food safety among both parties
- to identify channels of food safety information and identify possibilities and barriers to reach these for vendors and consumers and to discuss potential future promotion strategies with vendors and key-informants.

Research Methods

Data collection in general

Qualitative data was collected from March-June 2006 in Kumasi, the capital of the Central Ashanti region in Ghana (see pictures) among street food vendors and customers using various data collections methods (interviews, observations and focus group discussions, see specified schedule for field activities in **Annex 2**). Data was compiled in handwritten field notes, pictures and recordings during field activities, and was indexed, transcribed and entered in databases on laptop as quickly as possible during the field study.

Figure 1: Maps of Africa and Ghana



Source: www.burnet.internationalhealth.edu.au and www.lonelyplanet.com

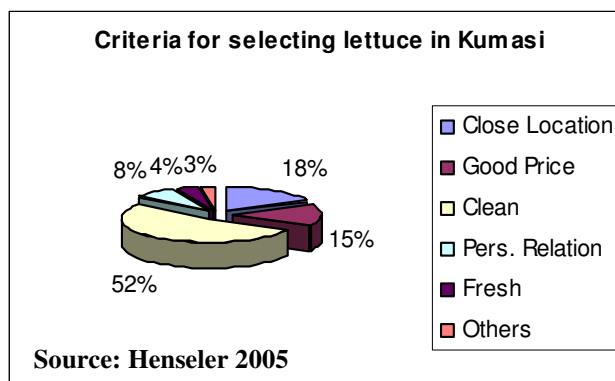
A medical anthropological research approach

This study shares the general objective of the medical anthropological research, which is to study people's ideas and practices concerning health and illness (Hardon 2001:5). The aim was to gain in-depth understanding of the study object in its context and thus to include the specific culture, tradition and social society as described by Janzen (2002). By paying attention to the values, perceptions and beliefs of vendors and consumers, the study gives emphasis to the subjectivity of health and medicine related concepts (Ibid.). This study and the medical anthropological science are therefore emic of nature and accept various constructs of health, whether or not they coincide with bio-medical explanations of disease.

The reason for initiating this qualitative research project was partly founded in previous quantitative studies of the street food sector in Kumasi. In a questionnaire survey it was found that 52% of all customers and vendors gave "cleanliness" as the most important criteria for purchasing lettuce (see figure 2). The researcher him self then stated: "*However, what cleanliness of lettuce means to these*

people has to be analysed elsewhere” (Henseler 2005). What this qualitative study offers is an opportunity to understand what constitutes such concepts of *cleanliness of food* and an occasion to look deeper into related practices and behaviour patterns.

Figure 2: Criteria when buying lettuce



To interpret the world from the peoples own perspectives researchers must experience actions as performed by the people (Hastrup 1994). Fieldwork and qualitative data collection is therefore necessary to gain in-depth understanding. Instead of asking *why* people behave and practice food hygiene but observe *how* people act it is thus possible to gain in-sight into people’s *knowledge-in-action* (Yoder 1997) and relevant non-verbal information (Hastrup 1994). In this study I therefore chose to do participant observations, taking active part in daily routines at vending places and thereby gain knowledge on practices and interactions of vendors. I washed and prepared vegetables, I grinded chillies, stirred the iron pots, served customers, did a lot of dishwashing and went to the market with the vendors to meet suppliers and buy groceries.

Taking part in the work was also an effective method to kick-start conversations and as I became a reliable part of the everyday, attitudes and perceptions of the vendors were revealed to me – information which would not have been exposed during a single interview. Finally, an important part of conducting field work is to work with a genuine interest for the study object. To eat the street food offered by the vendors - no matter how worried I was about the hygienic quality of the food – therefore seemed inevitable. Doing this field work has therefore also produced self-experienced information.

The medical anthropology aims to gain insight into the *words* as well as the *worlds* of people and to gain access to verbal information via interviews is a second relevant component of gaining anthropological knowledge (Hastrup 1994). Semi-structured and informal conversations with vendors gave the vendors possibility to describe, explain and reflect upon their own behaviour patterns and aimed to elicit vendors’ perceptions, to draw out categories of meaning and to map out values related to behaviours as described by Hardon (2001: 227). Compared to structured interviews or surveys this method of gathering information has the advantage of giving respondents the opportunity to explain

complex or sensitive issues in elaborate ways and be spontaneous in their contact with the researcher (Ibid: 226).

The third component of the data collection was to conduct focus group discussions (FGD) with customers. The FGD provides the researcher “*with a chance to find out differences in beliefs and gives a picture of how well health messages are accepted and provides explanations of why they may be rejected*” (Rifkin 2001:41). The FGD’s gave me an opportunity to explore in greater depth the identified issues and statements from the short individual customer street interviews and thereby provided me with customers various perceptions and attitudes towards eating street foods, and concerns towards related food safety issues.

Literature review

Background literature was searched in relevant online databases, collections, forums and relevant libraries in Denmark (PubMed: www.ncbi.nlm.nih.gov, CGIAR: www.infofinder.cgiar.org, IFPRI: www.ifpri.org, WHO: www.who.int, FAO: www.fao.org, Royal Danish Library: www.kb.dk, Library for Danish Centre for International Studies and Human rights (DCISM): www.dcism.dk/library, Denmark’s Electronic Research Library (DEFF): www.deff.dk).

The main search words and topics used, either separately or in combinations were: *street foods, street vending, food hygiene and food safety, perceptions of food hygiene and food quality and urbanisation in Sub Saharan Africa*. Due to the extent of material literature searches were predominantly limited to African countries. A few evaluations from street food sector projects in Asia are included in the last chapters of the thesis since they present relevant results from hygiene promotion strategies and policy making within this area.

Fieldwork activities - specified

Farmers

Previous studies have concluded that the majority of lettuce produced in Kumasi is purchased by street food vendors (Henseler 2005). I therefore felt it was vital to gain knowledge on the supply chain of vegetables in Kumasi. Thus, the third week of fieldwork was spent with field activities related to urban vegetable farmers in Kumasi. Participant observations were conducted during a three day stay in the home of an urban farmer following and taking part in his work routines. Informal interviews were conducted with the majority of the farmers of the area (10 out of 15) and with farmers’ wives (2). A farmers’ meeting on crop techniques and health issues was attended and staff from KNUST involved in conducting such meetings was consulted for additional information on such activities. Work routines of women harvesting and dealing the lettuce on the wholesalers markets were observed and 7 of these women also interviewed. Finally, some customers buying vegetables in bulks at the markets were consulted. These activities are not directly related to this thesis but necessary to understand the underlying structures of the food supply chain of street foods and to understand the challenges of urban agriculture and urbanisation in Kumasi.

Vendors

Vendor selection

8 street food vending sites were selected for observations in 6 different areas of Kumasi (see vendors' location on city map of Kumasi in **Annex 1**). It was prioritised to observe vendors from low, middle and high income areas and to include small-scale one-man vending enterprises with basic facilities as well as larger enterprises with multiple employees and permanent vending structures. Enterprises were owned by female (4) as well as male vendors (4). The study included two categories of street food vendors; *Fast food* and *Wakye* vendors. 6 out of the 8 vendors in the study were fast food sellers (no. 1, 2,3,4,5, and 6). One of these (no. 3) also sold traditional dishes (see further description of vendors in ch. 1.4.). Vendor no. 7 and 8 were traditional wakye vendors. All vendors handle all kinds of food items within their kitchens: meat, staple foods and raw vegetables. Selecting these vendors thus gave me an the opportunity to observe the full range of food handling practices performed in the streets and to observe traditional as well as modern food preparations.

Observations

Extensive participant observations with the 8 case vendors and general observations of the nearby communities and many other street food vendors were conducted through out the whole period (see observation schedule in **Annex 3**) and were passive as well as participatory. Vending sites were each visited between 6–13 times and observed on 4-9 occasions on various times of day ranging from 7 am.-10 pm. Few of the sessions were scheduled with the vendor's to avoid vendors and staff changing routines ahead of my visits and for the sake of the study. All vendors were positive towards participating in the study. One vendor (no. 4) was only visited on three occasions since it was highly inconvenient and time consuming to travel to his stand and since the atmosphere was rather intimidating making it difficult to carry out observations and fruitful interviews. Observations were conducted working or sitting inside or near kitchens and vending stands and included all cooking and vending procedures as well as interactions with customers. A semi-structured observation guide was followed (See observation guide in **Annex 4**). A set of observation notes were compiled for each vendor with exact descriptions of events, discussions, observation atmosphere, practices observed etc. for each observation session. Observations were continually indexed according to the main categories of the observation guide. A total of 76 pages of observation notes from vendors were obtained.

Interviews

A number of informal interviews and conversations were conducted with each vendor and one formal recorded interview was planned and conducted with each vendor at the end of the observation period. All interviews were conducted using semi-structured interview guides and focused on: perceptions and attitudes towards food vending, food hygiene, and food safety but also sought general descriptions of the life of a street vendor, challenges and problems for the street food business, customer relationships and cooking knowledge, education and experience (See interview guide in **Annex 5**). Formal interviews were conducted using translator if the vendor was not sufficiently

articulated in English to ensure interview material of good quality. Questions and answers were translated ad verbatim simultaneously during these interviews. Permission to record interviews were given by all vendors and staffs interviewed. Interviews took place seated near the vending stand or kitchen and often had to be conducted in small sessions, since vendors had to attend to their work. Transcribed interviews and interview notes produced a total of 80 pages text.

Consumers

Street interviews

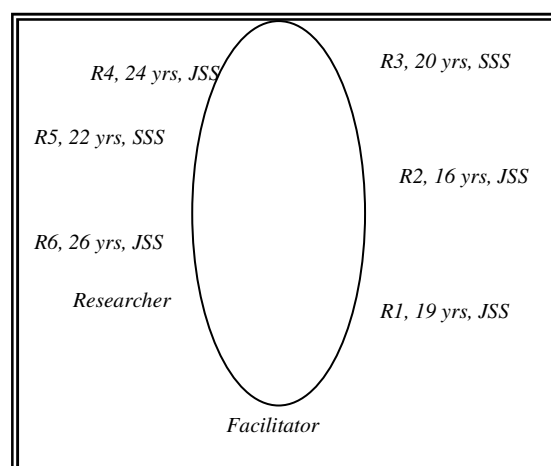
A total of 27 individual customers (16 males, 11 females) were interviewed on the streets. Customers ranged between 16- 48 years in age, 8 were students, 17 workers and 2 shop owners. The customers were recruited around the 8 food stands in agreement with vendors. Respondents were questioned on the spot for 5-15 minutes taking care to be outside of hearing range of the vendor. Notes were taken on all occasions and 5 of the interviews were also recorded and transcribed ad verbatim. Due to customers being in a hurry when purchasing food it was not possible to conduct all interviews as formal recorded sessions. The majority of interviews were conducted in English by me on single occasions assisted by the translator when respondents did not speak sufficient English. Interview transcriptions and interview notes make up a total of 40 pages. Street interviews were mainly conducted to quickly gain an insight into many people's consumptions patterns, attitudes towards street food quality and food safety and hence serve as basic knowledge to identify core issues and develop guides for later focus group discussions (See customer interview guide in **Annex 6**).

Focus Group Discussions

2 FGD's, one with female and one with male customers respectively, were conducted in Bantama, a middle income area of Kumasi where the concentration of street food vendors is high. The events took place in a middleclass restaurant and participants were recruited by me and the attached translator from outside the restaurant and followed to the restaurant where they were treated with drinks before the discussion. When recruiting, participants were asked if they regularly buy food at street food vendors and given basic information about the study (see introduction and question guide in **Annex 7**). Men were eager to join the FGD with friends which is the reason why this group ended up becoming rather big consisting of 12 men. The participants were 18- 35 years of age, all unmarried and had a maximum of Junior Secondary School educational level (18 years). Few older men were seen on the streets at the time of recruitment and the ones approached were not fast food customers. Women felt shy to participate in an FGD. Hence, we sought out pairs of young women who helped us recruit more women. The group eventually consisted of 6 unmarried women between 16-26 years old, with a maximum of Junior Secondary School.

Permission to record the discussion was obtained and anonymity promised. Seating of the group members including names, age and characteristics of the persons were noted down (see figure 3). All participants spoke some English but felt more confident to speak the local language Twi. Hence most of the discussions were facilitated by the local speaking translator. From time to time the facilitator translated the content of the discussions and asked me for further probing or questions. Most questions were formulated as open-ended questions or case stories from observations and street interviews and covered the same main issues as the street interviews. Each discussion took approximately 1 hour and transcriptions produced a total of 40 pages of text.

Figure 3: Seating example from FGD



Key-informants

Environmental Health Department of Kumasi Metropolitan Assembly's (KMA) was consulted to gain knowledge into the procedures and experiences of food safety control among street food vendors. On two occasions I attended the daily food safety and hygiene inspection rounds in urban households and vending places and had several conversations with environmental health officers (EHO). A formal interview with two EHO's from the KMA Asawasi sub-metro office was later conducted to gain further insight into the obstacles of controlling and monitoring the street food sector and to learn about street food initiatives taken by KMA during the last years.

MAFFAG is a key-actor in the CP51 project: researchers have repeatedly recruited respondents for interviews and focus groups discussions from the members of MAFFAG and the activities of the network have been observed and evaluated by several researchers. I therefore chose to conduct a knowledge sharing workshop for members of the association in the final phase of the field work. The aim was to present food vendor related findings of the research project and to gain knowledge from discussions on the findings. Discussion questions and role plays were used to get participating vendors involved in identifying and discussing main problems in implementing safe food and hygiene practices (see more on hygiene promotion strategies in chapter 4). 50 street vendors from all over Kumasi took part. All served fast food dishes and salads but some also sold dishes such as banku, sandwiches, pastries, plantains, pasta, spring rolls, rice and stews. Many of the vendors present were native speaking only and hence the attached translator functioned as the leading facilitator of forum discussions. Junior research staffs, including me, functioned as note-takers, photographer, acting out role plays and assisting facilitators. Staff of the local branch of the Nestlé

owned MAGGI Corporation was also consulted to gain knowledge on existing Maggi initiated vendor networks and hygiene promoting activities for street food vendors.

Data analysis

The process of analysis has largely followed hermeneutic interpretation principles of *categorisation, operationalisation, de-contextualisation and re-contextualisation* as described by Kvale (1997: 58). This process of data analysis has been *cyclic* in it's nature (Ibid: 58) proceeding forth and back between smaller and larger units of data and between empirical and theoretical perspectives, each adding to the final interpretation. Segments of data were first identified, labelled and categorised by assigning one or several codes from the pre-produced guides (such as *food hygiene practices, disease avoidance strategies or food safety knowledge*). The process of organizing data by coding was highly iterative and as the data collection proceeded and data became substantiated new subtle issues emerged and new codes were added (such as *neatness of the vending site, vendors' appearance, trust in vendors, perceptions of eating street foods and home made foods*). For the subsequent analysis of data, I have used the overall framework of "*multiple dimensions of perceived food quality*" (see more in ch. 2.1) since this model embraces all codes of data under five main categories. Data was then operationalized by assigning the data-categories to one dimension of perceived food quality and analysed accordingly. The final overall analysis codes were: social, nutritional, functional, aesthetic, and hygienic dimensions of food quality.

Data has therefore been *decontextualising*, when dividing it into smaller units and first interpreting these separately out of the larger context. Finally, data was *recontextualised* when merging it into a comprehensive framework, in which dynamics *between* aspects of data becomes evident and data is interpreted as a unity taking the context into account.

Study limitations and biases

There are noteworthy limitations of this field study and some biases were also recognized during and after fieldwork. These will be briefly listed here. Implication for the study will be further discussed in chapter 5.1

- This study has focused on middle class categories of food vendors and their customers in Kumasi and the results are therefore foremost valid for this segment of vendors and customers.
- More male customers than female customers and more young low social class people than older higher status customers were included in this study.
- Observations stemming foremost from 8 vendors are not representative for the whole sector of street food vendors but observations at each vendor have been extensive covering a wide range of aspects of vending street food and together with numerous interviews and conversations these have produced a comprehensive data material from some typical vendors

in Kumasi. Furthermore, the validity of research results was strengthened by using triangulation of data collection methods.

- Translation and transcription bias may be present to some degree.
- Further observation studies at household level with customers as well as observations with other categories of vendors are relevant to assess the level of hygiene and food safety in urban households and with lower class vendors.

Chapter 1: Study context: Street food in developing countries, Ghana and Kumasi

1.1 Urbanisation in developing countries

The world is becoming rapidly more urban. The population of the developing world is projected to double from 1.7 billion in 1995 to 3.4 billion in 2020 and rising deprivation in urban areas including poverty, food insecurity, and malnutrition are increasing faster than in rural areas – and urban growth now presents a serious challenge in developing countries (Maxwell 2000). The explosive urbanisation has had its effects on the structures of society. Migrants coming to urban areas in Africa have experienced higher food prices, growing joblessness and lower wages which have created great social inequality and new classes of vulnerable urban people (Ibid.). In Kumasi the rapid urbanisation processes have also created problems with supplying and maintaining proper water and sanitation facilities, decreased agricultural soil quality for peri-urban and urban agriculture and poor garbage collections systems (Simon et al. 2004). As part of the urbanization process, informal food supply systems have developed, including the street food sector which now constitutes significant public health benefits as well as risks for urban dwellers (Tomlins 2002).

1.2 Socio-economic role of the street food sector in developing countries

The street food sector has grown explosively in the last decades and is now widely recognised by food and health agencies to possess a huge socio-economic power and importance for developing countries (FAO, WHO, IFPRI). With limited capital assets to meet opportunities in urban areas, poor groups have developed livelihood strategies – vending street food being one of these and the sector therefore has an immense employment and income generating potential.. FAO thus estimates that vendors make up 6-25% of the entire labour force in developing countries (Dawson 1991) and in the Ghanaian capital Accra the street food sector is estimated to employ over 60.000 people and produce an annual turnover of over 100 million US\$ (Tomlins 2002). The benefits from street food trade also extend throughout the local communities and economies since vendors buy their fresh food locally, thus linking their enterprises directly with local farms and markets (WHO 2006). An example is the growing lettuce industry in Ghana, which is boosted by a vast demand from the growing street food sector (see box 1).

Box 1: Increasing demand for urban grown vegetables for the street food sector

Lettuce is now among the major raw eaten vegetables in Ghana and a very popular ingredient in street foods. A study by IWMI has identified fast food vendors as the major buyers of lettuce from urban markets in Kumasi. 855 tons of lettuce is produced in urban and peri-urban farms and 83 % of the lettuce is consumed at fast food stands. It is estimated that a total of 110.000 fast food customers eat lettuce daily from a fast food vendor in Kumasi (Henseler 2005). Hence, the street food sector secures the employment and livelihood of thousands of farmers and their families. Furthermore, many hundreds of farmers' wives are also involved in harvesting and selling the crops, making these families totally dependent on sales of vegetables to the street food sector.

A number of studies have shown that particularly poor, uneducated and women are involved in street food vending and since single vendors often support a household with the incomes from vending activities, massive numbers of people are economically dependent on street food sales (Dawson 1991, Maxwell 2000). Accra based studies indicated that most vendors are from the lowest income groups and thus vulnerable to small changes in income (Maxwell 2000). Furthermore, informal street food vending doesn't require training or large investments and therefore provides realistic self-employment for population groups that might otherwise be unemployed, including women and uneducated urban residents.

Low-income urban populations depend more heavily on street foods as a source of relatively inexpensive foods (Tinker 1997, Maxwell 2000, Van t'Riet 2003). Thus, in Accra it was estimated that street foods account for 39% of the total food budget in the lowest expenditure quintile but 25% in the highest. It was also found that households considered to be food-insecure¹ spend up to 41% of the household budget on street foods to cope, compared with 28% for those considered food-secure. A reason for the poor, spending more on street foods might be that low-income people are forced to buy foods in small portions on a daily basis which is in fact more expensive than buying larger amounts of raw materials for cooking (Maxwell 2000, Mwangi 2002).

But many other important reasons for purchasing street foods exist. Due to more people joining the labour force, increasing distances between home and the workplace, inadequate kitchen facilities, lack of cooking knowledge and changes in family cohesion, more people tend to rely on ready-to-eat foods consumed outside of their homes (Tinker 1997, Maxwell 2000). With more women working outside the homes families and children also become more dependent on street food as a convenient source of nourishment (Maxwell 2000, FAO 2006).

1.3 Food borne diseases and street food contamination

Food safety has been declared a global and increasing public health concern by International agencies such as IFPRI, FAO and WHO but the exact number of food poisoning and food borne diseases is not known since most incidences are not reported. It has been estimated that food and waterborne diarrhoeal diseases are leading causes of illness and death in less developed countries killing 1.8 million people annually (WHO 2002) most of whom are children. In Ghana it has been estimated that diarrhoeal diseases cause an annual of 9.700 deaths making diarrhoeal diseases the fourth most frequent cause of death in Ghana (who int 1). Outbreaks of food borne diseases (i.e. cholera, typhoid and salmonella) thus have the potential of seriously damaging the health status of the populations, simultaneously creating an enormous social and economic burden on communities and their health systems.

¹ Food insecurity was defined as "access by all people at all times to enough food to ensure an active, healthy life" which was based on caloric intake less than 80 percent of the advised calorie requirement for an adult of average size in Ghana which is currently 2.900 Kcal. pr. day.

Street foods have in general been shown to be of rather low hygienic quality, also in Ghana. Maxwell, identified links between reliance on street food consumption and prevalence of gastrointestinal infections (Maxwell 2000) and other Accra studies isolated *Shigella* *E. coli* and *Salmonella* bacteria in food samples such as tomatoes, meat, lettuce and ready street vended dishes (Mensah 2001, 2002) and found that 37.5% of the vendors harboured at least one enteric bacteria such as *E. coli* and *Salmonella* (Mensah 1999). A study conducted among 160 vendors in the southern Ga district also identified street food as a source of transmitting zoonoses and majority of vendors used water of poor microbiological quality (King 2000). Street food has also been shown to contain environmental contaminants such as chemicals, traces of pesticides and heavy metals (Tomlin, 2002). Changes in eating patterns, such as preferences for fresh and minimally processed foods also contribute to the increased incidences of food borne diseases ascribed to microbiological organisms (WHO 2002). An example from the Kumasi context is the irrigation of lettuce with waste water: 10 % of the waste water in Kumasi. The rest ends up in rivers and streams where some of it is collected by farmers and used for irrigation purposes (Keraita et al. 2003). Lettuce traded on urban markets has thus been found to be extremely contaminated with faecal bacteria and other harmful pathogens (Amoah et al. 2006).

Hence, hygienic behaviours, food handling practices of street vendors, water quality, and farming methods and are all potential sources of food contamination and efforts to ensure street food safety must therefore be initiated at many levels. Sale and consumption of street foods are on the increase within the West African Region and will continue to grow (WHO 2006). The safety of street food is therefore an area with growing importance for public health but the availability of safe street foods also provide an important platform for productivity, development and poverty alleviation (WHO 2002).

1.4 The street food sector in Ghana and Kumasi

Categories of food vendors and consumers in Kumasi:

Street food vendors in Kumasi prepare and serve a large variety of foods. *Fast food vendors* serve various types of fried rice (with vegetables and spices) served with pieces of fried chicken or fish. Meals typically comes with salad made of lettuce and a variety of toppings such as eggs, onions, cabbage, tomatoes and other raw vegetables. Some fast food vendors also vend local traditional dishes consisting of staple food items (i.e. *fu-fu* made of pounded cassava, maize and yam flavour, *banku* and *kenkey* both made of fermented maize). *Wakye* vendors (pronounced *waché*, meaning beans) is the commonly used name for vendors selling a traditional dish of beans mixed with rice. The dish is sold together with a range of stews, meat dishes, salads, spaghetti and toppings. Other major categories of vendors are chop bar owners, hawkers, and porridge sellers. Chop bars are traditional small scale road side restaurants serving *banku*, *fufu* and *kenkey*. Porridge sellers serve breakfast porridge (made of fermented maize dough) tea, coffee and fried eggs during the early morning hours. Besides these vendors thousands of hawkers are selling snacks, breads, ice creams, cakes, maize cones, kebabs, fried plantains etc. vending from road side tables, wooden boxes carried on their heads or directly on the ground.

**Chicken and fried yam****Roasted maize cones****Fried plantain and stew sellers**

Studies of street food vendors in Accra suggest that 90% of vendors are women (Maxwell 2000) but no such estimate exist for Kumasi. My observations and previous studies in Kumasi (Olsen 2005) suggest that males own the biggest proportion of fast food enterprises in Kumasi, while women make up the vast majority of traditional street vendors. This is supported by MAFFAG and EHI. Many youngsters and school children are also active selling snacks on a part-time basis. In Accra it was found that vendors had minimal or no education, 75% did not pay taxes and most did not belong to vendors' associations. The member status of Kumasi based networks indicate that very few vendors are indeed members of associations in Kumasi and my field studies also suggest that vendors in general have low education and minimal formal cooking knowledge (see more in ch.4). EHI support this finding.

Street food consumers observed in this study were predominantly young male workers with low educational levels or students of both sexes. This is a quite typical picture of street food consumers also found in other studies (Tinker 1997, Mwangi 2002). The consumer group seems to differ between the types of preferred vendor, with higher status customers, such as students and shop owners, among fast food vendors and lower among traditional vendors. This will be further elaborated in chapter 3.2 and 3.3.

The life of street vendors

The street food vendors observed in this study all had stands from where they vended ready dishes. Stands were simple metal cages or wooden tables and included a minimum of facilities such as a number of shelves and a roof made of textile or wood (see pictures). The traditional vendors cook foods in outdoor kitchens on multiple pots boiling on charcoal fires. They arrive to markets around midday and start selling foods. Fast food vendors all prepare food in or around their stands, frying the chicken on charcoal fires outside the stand and frying the final rice dish on stoves inside the stands.



Stand facilities of vendor 5, 8 and 2



Kitchen facilities at vendor 5 (left and middle) and 8

Street food vendors operate under challenging conditions being in a highly unstable and competitive business with a relative small income. Many vendors spend time and efforts ensuring water and sanitation facilities, negotiate rent and rights and have to pass food safety and health control by town authorities. The two cases below give impressions from the daily routines and lives of two vendors in this study.

Box 2: Example of daily life challenges of street food vendor 1; King's Fast Food

The stand is situated on the roadside of a residential area. The area is considered to be middle-high social class with many two stored newly build houses surrounded by protective walls. The street is very quiet with only few people passing by on foot.

The stand is owned by Serwaa, a 29 year old woman. She left school when she was 17 and started cooking for celebrations and working in a fast food shop. She has recently taken over her own stand and chose it because it was situated near the town Stadium a very busy area with many vendors and customers. Now the Stadium is under construction and all the vendors driven away by town planners. Serwaa was forced to move to this spot which she rents for a high price from a resident of the area. She hopes that she can move back to the Stadium one day. In the meantime she is concerned she can not earn enough to keep the business going. Therefore, even though Serwaa has very few customers she starts work at 7 am., goes to the market, cooks rice, rests and then stays in the stand until 10-11 pm. to make the most of the day. Never the less she dreams about one day creating an outdoor seating area for customers and turning the stand into a real restaurant.

Serwaa lives apart from her husband and has a 1 year old son staying with her. She can not afford a babysitter so she brings him along for work everyday. While she cooks he crawls around the inside of the stands and it is indeed difficult for her to work effectively while keeping the son away from the heat, the water, the gas and the scrap. She is also forced to change his diaper inside the stand which she feels is highly inappropriate.

Serwaa lives in a rented room not far away. There is no water source at the stand so she cooks rice in her room every morning and brings it to the stand. Serwaa finds it very difficult unsuitable to cook here since it produces smoke and produces an unhealthy environment for her son. She also brings buckets of water for dish washing to the stand from her room every morning and complains that it is a hassle to bring heavy buckets and rice every morning and therefore often prioritises to bring less water. She knows that utensils are not washed adequately on such days and often she has to buy expensive water in sachets to rinse the plates. On days with good earnings she therefore spends money on a taxi to carry all the items to the stand. Serwaa finds the public toilets around too disgusting so once in a while Serwaa has to close down the shop and walk half an hour back to her room with her son to use the toilet.

When Serwaa is busy, her sister and a school girl helps out – neither of them have any food education or health licenses but Serwaa feels it is ok since she is supervising them. Serwaa has been inspected by KMA several times and has never been reprimanded. She holds a health licence but it has transpired several years ago. Serwaa feels it is a big hassle and expenditure for her and her son to go to the local authorities and the health clinic to renew it and she therefore keeps postponing it.

Box 3: Example of daily life challenges of street food vendor 2; Royal Fast Food

“Royal Fast Food” stand is situated in a very busy and congested part of town where lorries, containers and buses always fill the streets. Vendors, hotels and restaurants have lots of customers here. The stand is owned by Ali, a 37 year man and together with his brother, Dauda 22 years old, he works in the stand from 10 am. - 1-2 in the night mainly serving regular customers in the day and truck drivers passing through town in the night.

The brothers live together and support a family of 9. Ali is worried that depending on one food stand is too risky and to make enough money he also cooks for rich people in Kumasi. He also spends time teaching Dauda everything he knows about cooking so he can take over the stand while he himself cooks for others. Actually Dauda does not want to be a vendor but he has to support the family and schooling is too expensive to continue. However, he dreams of one day finishing vocational school and being a car mechanic. Ali has completed a 2 and a half year catering course. He was an apprentice and cook at a four star hotel in Kumasi but he lost his job. Now he wishes to go back to catering school to enhance his cooking knowledge but he sees no chance how. He says that the working life of street food is too strenuous and he therefore works non-stop - to be able to invest for the future. He is looking out for a location of establishing a restaurant but it is not affordable with the income from the food stand alone.

The day starts early in the morning when Ali goes shopping on the Central Market. He takes his time to find the foods items and he sometimes even drives to nearby farms to buy vegetables from farmers he knows. During afternoons he cooks non-stop while Dauda collects water, cleans the vegetables and does the dish washing. Ali does not find expenses for water, toilet and washing facilities to be too high and Dauda often fetches additional water from the nearby tap to ensure proper dishwashing and clean water for rinsing vegetables. But it is a serious problem for Ali that his only cooling facility is the freezer of the nearby police station which he pays an officer a high rent to use. His own home is too far away to bring the meat and leftovers everyday. He therefore has to store leftovers over night outdoor in the stand.

Ali is a known and well liked man in the neighbourhood and he has a large group of regular customers who come because they think he is an honest man and because they expect him to keep himself and the place neat. Ali knows that he has to keep the hygienic standards up to keep attracting customers but he is worried about the quality of food: The open structure of his stand makes contamination from exhaustion and dust from passing vehicles unavoidable. He also finds it difficult to clean satisfactorily in such a cramped and small kitchen and he has troubles keeping pests such as rats, flies and cockroaches away. But Ali is a licensed vendor and he always goes to the main Hospital once a year for health check-ups together with his brother and he pays great attention to advice given by doctors, KMA and often asks his business relations about hygienic issues.

Registration and control of the street food sector in Kumasi

Street food vendors must be registered with name, vending site, and type of food vended within KMA and pass a medical screening test on a health clinic to obtain a vending license. The test includes blood and faeces screening for TB, typhoid and worm infections. The health certificate cost 35.000 Cedis (app. 3.5 USD) and should be renewed once a year. In recent years it has been a top-priority of KMA to screen and register vendors, promoting it in half yearly community campaigns (vans with loud speakers etc.). EHI staff estimate that 80 % of established vendors are currently registered, but it is a major problem to get vendors to renew licences. EHI regularly inspect vending and preparation sites, examining sanitation and water facilities, utensils, storage, wastewater disposal, methods of refuse storage and general hygienic conditions around cooking and vending premises.

KMA have the authority to fine vendors and close down vending stations if they find the food unsafe or the facilities inadequate for safe food vending. Most often EHI will discuss hygiene or safety problems with the vendors on site and return to the vending place to ensure that improvements have been implemented. According to EHI staff the challenges of improving the general street food hygiene with these tools are vast; the work is tedious and EHI can impossibly cover all grounds. Vendors are also very reluctant to comply with orders from KMA. On occasions EHI arranges health and food hygiene workshops for vendors in cooperation with vendor associations, chiefs etc. but EHI stated that it is very difficult to attract vendors to such educational activities.

Vendors and their organisations in Kumasi town:

Kumasi has grown explosively during the last decades and is today the second-largest town of Ghana housing 1.2 million people, which is more than twice the number recorded during the 1984 census (Keraita et al. 2003). The city hosts one of the largest markets in West-Africa and together with the local population thousands of petty traders, businessmen, travellers and whole sellers on the market create a huge demand for ready available street foods in Kumasi. The Metro Director of Sanitation and Environmental Health in KMA recently estimated that more than 10.000 licensed vendors are operating in Kumasi (Olsen 2005) and the registration books also show a marked increase in registrations during the last few years². In addition to licensed vendors EHI confirm that hundreds of vendors operate ad hoc and without any official licenses.

Three organisations exist for small scale food vendors in Kumasi all initiated and sponsored by The Nestlé/Maggi Food Corporation: The “Maggi Traditional Caterers of Ghana” (for small scale restaurant owners), the “Nestlé Tea” (coffee and tea sellers) and the fast food association “MAFFAG” for street vendors which currently holds 122 members about 50 of these being active and attending weekly meetings. MAFFAG members discuss social and commercial issues on their meetings and are taught about Maggi products. These also organise yearly clean-up campaigns on streets and markets to promote safe and clean vending premises. No organisations exist for street food vendors producing traditional dishes vended from street stands. The Maggi Company also has individual business relations with app. 500 tea sellers, 320 traditional food vendors, 400 fast food vendors and 75 restaurants in the Ashanti region alone.

² This tendency is probably an effect of a rising number of vendors, as well as the intensified vendor registration policy of the KMA in recent years, in which health screenings and registration of street food vendors have been heavily intensified by KMA and in which vendors have been penalized, prosecuted and street foods been confiscated, forcing vendors to be screened and obtain licenses.

Chapter 2: Theory

2.1 Food Quality – a multidimensional concept

In the African context studies of street food quality have focused mostly on investigating the microbiological quality with studies such as those of Mensah (1999, 2001, 2002) and King (2000) from Ghana, Umoh (1999) from Nigeria, EI-Sherbeeney et al. (1985) from Egypt, Murindamombe et al. (2005) from Botswana, Mosupye et al. (2000) from South Africa and Cardinale et al. (2005) from Senegal, all concentrating on bacterial contamination, pathogens in food and food hygiene. As already described in ch. 1.2 some more studies have also focused on the socio-economical importance of street foods. Furthermore, many meetings in international food and health organisations have been invested in street food safety, and researchers as well as policymakers seem to reach the same conclusion: It is essential to raise the risk awareness and educate vendors as well as consumers on food safety (FAO 1997, Garrett 2000, WHO 2006). Few studies have concentrated on the actual practices and knowledge levels of street food vendors on hygiene related issues (Mwangi 2002, Mensah 1999).

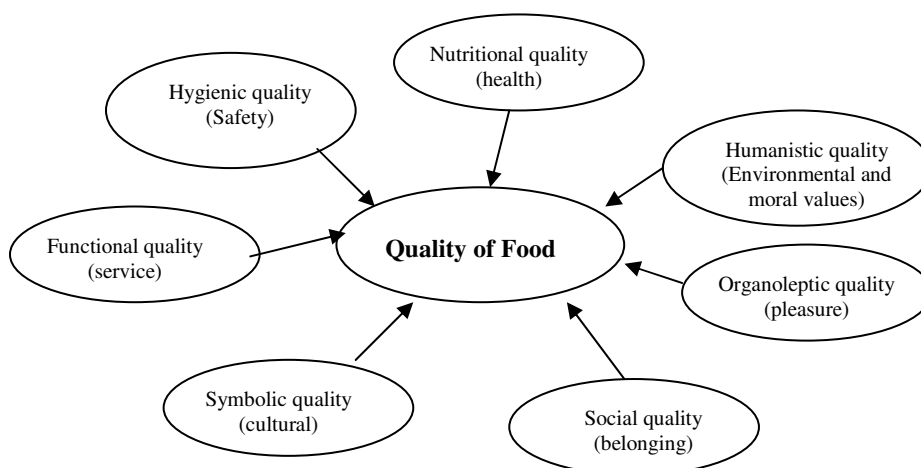
Quite a few European based studies on food perceptions have focused on lay peoples' perceptions of *food dangers and food risks* (i.e. Frewer et al. 1996, Hansen 2003, Redmond 2004, and Knox 2000). These studies plead that in order to change risk behaviours, individuals have to perceive that their current behaviours endanger health and need to be changed and that taking action has a strong likelihood of reducing such risks. Therefore, they have concentrated on investigating to what extend people perceive and acknowledge food related risks such as food contamination. Studies have found that people tend to express *optimistic bias* towards food risks, underestimating or ignoring risks of encountering harmful effects from foods (Redmond 2004). In others studies people tended to express *illusion of control* over food related risks (Frewer et al. 1996) and Hansen et al. found *trust* to compensate for knowledge of food risks (Hansen 2003). Hence, food related risks and dangers are coped with using many strategies and these studies have concluded that *perceptions of food risk* are often not the core dimension of food quality assessments.

Hansen et al. therefore claim that more sociological and anthropologically founded studies must concentrate on how food quality is actually thought of in an every day life context (Holm et al. 1996). Few studies have devoted attention to such dimensions of perceived food quality and to my knowledge none have sought to understand the variety of individual perceptions and attitudes towards street food quality and street food safety among vendor and their consumers. Hence, there is a need to approach perceived food quality as a multidimensional construct including biomedical and nutritional quality, risk awareness, social and cultural setting.

An exception is the study of Prigent-Simonin and Hérault-Fournier (2005) who used a *multi-dimensional food quality model* and adapted it to a study of European consumers' trust in local

producers and food products (beef, wine, and poultry). The study focused on the direct relationship between food producer and consumer and the theoretical frame of the study therefore seems to fit the street food vendor-consumer relationship as well. The seven dimensions of perceived food quality considered in the study were: nutritional, hygienic, practical, organoleptic, social, symbolic and humanistic quality (See figure 4).

Figure 4: The different components of food quality



Source: Prigent-Simonin, Hérault-Fournier 2005

Prigent-Simonin et al. describe organoleptic quality as “*the sensory pleasure we get from eating or cooking foods*”. The social dimension is “*connected to the way we select, cook or eat food, which enables us to position us selves in certain social groups, relations or reference groups*”. The symbolic quality of food is defined by the cultural background of the consumer and if the food item is eatable according to his/her culture. Functional quality is defined as “*the degree of how practical the food is to handle, transport and eat*”. Humanistic food quality is described as an awareness of purchasing foods taking environmental issues such as less intensive farming and fair price trade into consideration. The nutritional dimension of food was defined as “*the food’s overall contribution to a balanced diet*”. Finally, hygienic food quality is defined as “*food containing no toxic substances and being good for the health of consumers*”. These definitions will also be used in this study but also be broadened up and contain more aspects.

As already described previous street food studies have concentrated foremost on two of these dimensions: hygienic and social. The model and its multidimensional perspective on food quality will thus constitute a beneficial frame to understand a wider range of dimensions of perceived street food quality in Kumasi. This can give a full picture of how vendors and consumers perceive and consider food quality - and how this is of importance for food handling practices and purchasing patterns. This will broaden up the scope of previous studies focusing foremost on the two dimensions of hygiene and social-economic significance.

2.2 Etic and Emic theories of hygiene, dirt management and contagions

From a public health point of view the hygienic quality and food safety is a crucial dimension of street food quality since foods have been recognized to be of low hygienic standards and a potential source of diseases. But as I progressed into vendors' and consumers' perceptions of street food hygiene it became obvious that perceptions of hygiene are not only rooted in microbiological reasons but also draw heavily upon social, cultural and aesthetic values. Examples of such very different hygiene rationales encountered among vendors are mentioned in Box 4. Similar rationales were met among customers.

Box 4: Examples of different hygiene rationales among street food vendors

Vendor 2; Royal fast food: Vegetables have to be cleaned, utensils have to be washed and meat has to be thoroughly cooked to avoid germs and make hygienic foods says Ali, who used to be a professional cook and now owns this fast food stand.

Vendor 3; Adom fast food: One midday the vendor asks me to clean my self up: to fix my hair, put on an apron and wash my hands before we go strolling down the shopping street where this stand is situated. We are going to visit her regular customers to announce the menu of the day. It is important to appear clean she says so the customers can see that she is a good vendor.

Vendor 4; Mario's Fast food stand: Levanos who has been cooking for 4 months tells me he has to bath at least two times a day when he is vending: Once in the morning before he starts cooking so he doesn't bring any dirt to the food stand. And again after finishing food preparations so he can appear clean in front of the customers. Maybe he will also bath in the evening before he goes to bed, since he is often stained with grease after working a whole day in the stand.

Vendor 6; Aingo Fast food: Basch is a Muslim and one of the vendors met in the stand. Once a day he goes to pray and before leaving for the prayer he washes his arms and his hands. He thoroughly repeats this routine when he returns to the stand. It is important to appear clean before God *and* the customers he says.

Vendor 7; Traditional food stand in Adom: The vendor Aisha has several staffs. When they start cooking in the morning she asks them all to put on hair covers. The food has to be hygienic she says and a part of that is not having hair falling into the food as they cook. She also likes the customers to see that she takes care to instruct her staff in hygienic manners – that makes her look like a responsible vendor.

As the examples demonstrate vendors operate with various hygiene rationales and express several of these during their everyday practices. Religious, biomedical, aesthetic and social norms affect these rationales and hygiene practices parallel. Theories of *emic* and *etic* hygiene rationales can describe the differences between these aspects of hygiene.

The etic view on hygiene:

Observing and assessing performed hygiene practices from a scientists' outside view has been labelled as the *etic* view on hygiene focusing on sources of contamination and risk of infection. This point of view on hygiene is rooted in the European sanitarian movement beginning in the mid 19th century. At that time the urban growth of western cities and the rapid industrialisation created

congested living conditions for the urban populations and caused concerns of public health (Rosen 1993:177). According to the dominating miasma theories, sanitation and sewage became the main tools in combating the great endemic diseases such as typhoid, tuberculosis, diphtheria and cholera, defeating the contagious diseases by improving the overall hygiene of the urban environment by removing and limiting the risk of contact with disgusting dirt and waste. The focus on contamination was reinforced with the great scientific revolution of Louis Pasteur and others in the mid and late 19th century. Discovering the significance of micro-organisms and their roles in disease transmission, the germ theory became the leading and most weighty argument for enhancing hygiene (Ibid: ch. VII). Promoting hygiene was from then on inevitable connected with eradicating favourable living conditions and sources of bacteria, parasites and other pathogens.

However, avoiding and combating dirt has proven to be a desirable behaviour long before the discovery of bacterial disease transmission and from the above cases it is obvious that hygiene is not just about removing germs. Examples of ‘indigenous’ dirt-avoiding behaviours are many in history; Rosen describes Greek, Roman, and Middle Age hygienic behaviours (Rosen 1993), Cohen describes hygiene and dirt avoiding behaviours in European cities through out the 19th. Century (Cohen 1989) while Douglas (2002) and Green (1999) both describe African tribes’ hygiene related rituals. All this took place before the discovery of bacteria or in communities where bacteriological rationales are not present. However, the cases showed that hygiene perceptions, not rooted in theories of bacterial disease transmission, need not to be *indigenous* in their nature since they exist in a present urban Ghanaian society, with people being knowledgeable about germs and bacteria. Hence, hygiene needs to be looked at from an *emic* angle as well to explain why people do not only express *etic* hygiene rationales.

The emic view on hygiene:

The emic view is an inside point of view of people expressing and practising hygiene. It is a map of what actually motivates hygiene behaviours - or lack of hygiene practices. Mary Douglas emphasised such emic views when stressing that dirt needs to be interpreted within a symbolic and cultural frame (Douglas 2002). In her classic book *Purity and Danger* from 1966 dirt is described as “*matter out of place*” thus being a relativistic construct: “*Dirt is essentially disorder. There is no such thing as absolute dirt; it exists in the eyes of the beholder* (Ibid: 2). Dirt and unhygienic conditions are therefore interpreted as a part of a social order and can only be understood in relation to the fundamental social values in society. It cannot be set apart from the rest of society: “*Dirt then is never a unique, isolated event. Where there is dirt there is a system. Dirt is the by-product of a systematic ordering and classification of matter, in so far as ordering involves rejecting of inappropriate elements*” (Ibid. :44). Hygiene and motivations for hygienic behaviours are therefore socially rooted behaviours which serve to uphold order and appropriateness. In recent public health and hygiene research Valerie Curtis has underlined the importance of also recognizing such strong social dimensions of hygiene in developing countries. Research in hygiene behaviours among African mothers made her realize that: “*If hygiene is a social phenomenon, then it cannot be understood*

except in a social context. And without methods for understanding hygiene in context, without analysis of the factors underlying and determining hygiene, efforts to encourage better hygiene for the sake of public health will remain ineffective” (Curtis 1998:3). This fundamental realization is the basic effort of this thesis; In order to understand the hygiene practices expressed by vendors and customers and in order to use this knowledge to promote safer street food practices it is necessary to investigate the underlying emic hygiene perceptions.

The cases showed that street food vendors in Kumasi do not operate within strict biological neither supernatural hygiene rationales but also host rather naturalistic perceptions of contamination, pollution and disease. Douglas has studied examples of personalised and supernaturally founded hygiene perceptions and disease explanations such as sorcery, witchcraft, magic and miracles. In recent years anthropologist Edward Green has given emphasis to another emic view on pollution theories which can further explain the rationales of vendors. He stresses that indigenous peoples’ categorisations of disease need also be interpreted as lying in between microbiological hygiene theories and personalised perceptions of dirt (Green 1999). His *indigenous contagion theory (ICT)* pleads that dirt and disease are mainly interpreted as caused by natural factors such as cold, heat, winds, dampness, upset in the basic body elements, and hence more *naturalistic* than *mystical*: “*I suggest that pollution beliefs...are naturalistic or quasi-naturalistic. They involve an impersonal process of illness through contact or exposure. Polluted individuals are not singled out for illness or misfortune by a human or superhuman force; they typically become polluted from mere contact, from being in the wrong place at the wrong time*” (Ibid: 14). According to ICT emic hygiene perceptions are therefore both cultural and socially founded but also closely related to previously mentioned miasma theories in which people interpret dirt, contamination and disease as caused by external factors such as wind, dust, flies and garbage. Seen together, these emic and etic hygiene theories based on scientific, social and cultural norms, offer explanations for many aspects of hygiene practices and perceptions and through this thesis it will become evident that vendors and customers operate with a variety of these in their everyday lives.

2.3 Impression management: A theoretical frame for understanding behaviours & interactions of vendors and consumers

During field work I had the full access to food preparation sites as well as the vending areas and at all vendors I saw obvious distinctions between food practices and behaviours going on ‘behind the counters’ and what was ultimately presented to the customers in the stands. The practices, manners and appearance of vendors, cooking surroundings and foods simply differed. In the two boxes below two such typical situations from vendors are sketched out, outlining “back stage” and “front stage” behaviour patterns.

Box 5: Front and back stage behaviours at vendor 3:

At this stand, situated in the busy and upper-status part of the shopping centre of Kumasi, you can buy a modern meal of fried rice and chicken or a traditional meal of banku with fish, stew and chilli paste. All meals come together with a serving of salad and are served either at the seating area or as take-away in small plastic boxes.

Back stage:

Inside the kitchen the food is cooked on gas stoves. Vegetables, meat or sauces cooking and new dishes are being prepared on tables, the floor or wherever the staff can find the necessary space to work. The kitchen is busy all day through and the staff is putting efforts into working and producing food profitably, not paying much attention to systematizing the work process: they grind the chilli paste, they chop and rinse the vegetables, they scrape the fish and fry the chicken – all is done in a seemingly disorganized way but dishes are always ready to be served and consumed when the customers come around for lunch and dinner to order. The staff is usually relaxed and work is performed in an informal atmosphere; They laugh, joke, discuss loudly, sing along to the radio music and often greet friends passing on the streets. The kitchen is also often visited by people who hang around to chat with staffs, maybe help out or just to enjoy a cold drink. Work goes on with people coming and going not being overly concerned with how the kitchen presents it self to the ones who enters – also if it is totally chaotic and dirty. In general the inside of the kitchen constitutes a friendly workspace where everything is dealt with as it comes along, where nothing is hastened and where solutions are often improvised to allow production to continue.

Front stage:

When observing the outside surroundings and interactions with customers in front of the stand, I witness other behaviour patterns and prioritisations: when a customer buys a meal, the food is arranged artistically on a plate, piling the food in a pyramid and taking care not to touch the food with hands. The vendor places the plate on a tray together with a white napkin, a bowl with clean water for washing hands and a clean glass. She covers it all with a clean tissue to protect it from flies as she carries the meal away. She usually also puts on an apron to cover the stains on her clothes, washes her hands before she goes to the customer and serves the food in a polite way by smiling to the customer who awaits the food in the seating area outside the food stall. Sitting in the shade at a clean plastic table surrounded by flowering bushes the area gives the impression of being in a leisurely park even though the stand is situated in the middle of a heavily trafficked neighbourhood. The seating area is well-swept and no litter is disturbing the eyes of the customers and the staff always monitor that the areas stays attractive and neat. When helping to clear off the tables, I am also told to fix my hair, not speak to the customers, bring dirty utensil into the kitchen immediately, whipping the tables clean and not leave any traces of dirt for new customers to see.

Box 6: Front and back stage behaviours at vendor 7:

In this stand customers can buy themselves a solid meal of wakye. The food is prepared in a private courtyard in the labyrinths of one of the poorest suburbs of Kumasi. After preparation the food is carried to the local market situated on the road side of a major approach road to Kumasi. The market is a scattered collection of provisional stands from which many other street food vendors operate. Customers take-away their foods in plastic bags or eat it with fingers from plastic plates on a bench next to the stand.

Back stage:

The food is prepared in the courtyard of a private house owned by the female vendor in charge. The vendor, her husband, 4 of their children, some spouses, some grandchildren, a number of young male workers sub-renters and a few of the cooking staffs are all accommodated here and the courtyard is the centre of their everyday lives as well as the food production. The 6 staffs and the vendor start cooking around 7 am by lighting the fires and boiling water in big iron pots. During the day they stir fry the fish, chicken and beef, cook the stews, eggs, spaghetti, wash and prepare the vegetables for salad, and mix and boil the chilli sauce. They are busy and the atmosphere is loaded with hectic activity: staffs argue loudly with each other and the vendor, the children are all over the place sometimes being punished because they interfere with the cooking. Animals are running in between the pots being traced away by staffs. Guests, neighbours and business relations are also frequently visiting the place. While cooking, staffs and vendor do not spend time cleaning, organising or tidying up the place but are concentrated on chopping, boiling, stirring and discussing the food preparations and are not bothered with other people's presence or staring as they pass the court yard. Neither are staffs concerned with their looks: they are wearing worn out clothes, frequently drying off sweat in their shirts which are blackened from charcoal and stained with palm oil.

Front stage:

Around 1 pm. the food is ready and brought to the market for sale, usually by staffs carrying the foods in tin bowls on their heads. Now the behaviour patterns change and many front stage impressions can be observed. The appearance of the seller and all utensils brought to the market is important: All bowls are washed with soap and wiped shining clean before the food is poured into them. The girl who is selling the food takes a bath, puts on a clean dress, make-up and jewellery. She always wears a head cover made of a new colourful piece of traditional fabric and during the day she takes care not to get any stains on her clothes. She also keeps a white handkerchief to wipe of sweat from her face. When arriving to the market she arranges the many on top of each other in an artistic way and covers all the food with white clean lace and nets which gives the stand an elegant appearance attractive to customers. The stand is situated right in front of an open gutter and flies are filling the air. But the girl sweeps the immediate surroundings at least three times a day, continuously collects litter from the ground and makes sure that the gutter is the only visible dirty feature in her vicinity. Her manners are also significantly changed: When standing behind the table she quickly identifies the wishes of the customers and serves them graceful movements and only speaks few words in a low and soft voice always ending with a 'thank you' or 'sorry'.

The impression management theory of Erwin Goffman

In Goffman's self impression management theory people are portrayed as actors on an everyday life scene, managing the impression of self in the public space on fully visible 'front stages' and veiled 'back stages' (Goffman 1956). According to this theory individuals' actions can be understood as part of a social consciousness in which people stage them selves in social society striving to give impressions of certain status and role. Goffman's theory and the theatrical analogy is therefore useful for this study when trying to understand the described stages on which vendors and consumers act. The analogy also provides good explanations for the observed unsafe and safe food related behaviours

which at first glance seem out of order and without any reason. Furthermore, instead of describing hygienic behaviours as individual actions and concerns this theory focuses on behaviours created in the meeting between the acting parties and gives importance to the social relationships between them. Hence, it offers an opportunity to understand the patterns of behaviours and interactions between vendors and consumers.

Front stage and back stage behaviours

According to Goffman a social establishment can always be studied profitable from the point of view of impression management (Ibid: 238) because it visualizes characteristics of our social interactions. When defining a social establishment as “*any place surrounded by fixed barriers to perception in which a particular kind of activity regularly takes place*” (Ibid:238) I feel confident to take on his analogy and apply it to ‘the street food stand’ as a social establishment. A street food stand indeed hosts well defined and regular activities of food vending and evokes quite fixed perceptions of service, food production and food purchasing for both vendors and customers.

Goffman describes a social establishment as divided into a ‘back stage’ on which “*performance of a routine is prepared*” and a ‘front stage’ “*in which performance is presented*” (Ibid: 238). This distinction between preparation and presentation was clear in the above cases and very fitting for the street food sector in general: Any vending site has a back stage where food is prepared and where food, staff and kitchen is invisible to the consumer. In Kumasi such preparation sites were located in vendors’ homes, rented rooms, back yards or areas behind or inside the food stands. When finishing preparations vendors turn to the front stage areas, where foods and vendors are presented to the public and customers. But the above cases also visualises that hygienic practices are indeed performed with the awareness of such stages: on the back side of these kitchens hygiene practices are heavily influenced and overruled by priorities such as cooking routines and practicalities (such as time, space and convenience) which makes effective and profitable cooking possible.

According to Goffman the exact distinction between these two settings are made of stimuli and behaviour patterns expressed by individuals. On the front stage this especially includes stimuli such as ‘*appearance*’ and ‘*manners*’ (Ibid: 24) whereas the back region is *where suppressed facts make an appearance* and where *the performer can relax and step out of the front character* (Ibid: 112). This implies that the front stage is the area on which the individual struggles to project impression of one self and thus to control the perception of one self by others. Conversely, the backstage is the area *behind the curtain* on which behaviours and facts damaging to the impression-struggles are disclosed. The above cases clearly confirmed that vendors have strong awareness of such manners and appearances as important for projecting the right image when entering the front stages of vending - concerns such as appearances of immediate cooking surroundings, foods and vendors are high here. Appearance and manners are all kept ‘neat’ to project a positive impression to the customers.

Another important component in *keeping up the show* are the relations and interactions between an audience and the performer, here the vendors and the customers. All parties must act according to a mutual agreement (Ibid: 238) and play their specified roles. The performer will employ the above attributes to set the scene and the audience contributes to upholding the show by employing tact via polite interaction (Ibid: 211) - thereby respecting the impressions made by the performing part. These patterns of behaviours will ensure that no one is *socially humiliated or embarrassed* (Ibid: 212).

The distinction between the two stages is often not controlled but upheld voluntarily by the acting parties themselves. Not to intrude on the arenas of others is simply a natural part of respecting the social order between the audience and the performer (Ibid: 229). This was also the case for many street food customers who act out their part of the show by agreeing in the distinction between a front and back stage and seldom intrude on the work space or arenas of vendors - even though it is sometimes easily accessible to them.

Chapter 3: Findings and analysis

3.1 Multi-dimensional analysis; Street food quality dimensions of this study

From data it was possible to identify signs of all of the above mentioned dimensions of street food quality among vendors and consumers in Kumasi. Many characteristics were found to be interlinked and crosscutting and the seven dimensions are therefore re-grouped into five main dimensions: social, nutritional, functional, hygienic, and aesthetic quality (see figure 5). Aesthetics were not identified as a separate dimension in the Prigent-Simonin study but turned out to be significant in this data material and will be described and analysed independently.

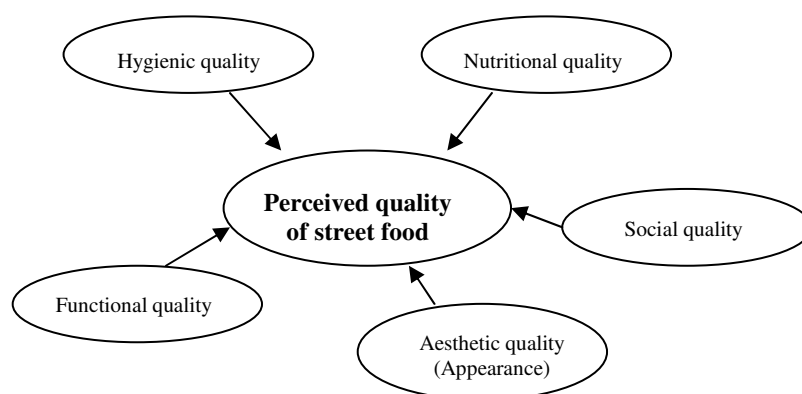


Figure 5: Perceived street food quality dimensions in this study

Figure 5 pictures each dimension detached from others. However, data turned out to hold much higher complexity and the present figure does not capture the dynamics and linkages *between* some of the dimensions. After analysing each dimension separately a model will therefore be presented which attempts to visualize such dynamics of vendors' and consumers' perceptions.

3.2 Social quality

In this analysis the two dimensions of *symbolic* and *social* quality are merged since many traits of cultural references and social values were interconnected in the data. The social dimension of this study thus concerns a row of norms and perceptions rooted in the social and cultural setting of Ghana and provide the framework for understanding the position of the street food sector in such Ghanaian context. While other dimensions are mostly concerned with individual perceptions of street food this dimension is highly concerned with *inter-personal* issues such as the social relationships between customers and vendors and the social values and norms influencing peoples behaviours in the public space.

Low social status of street foods

As described in ch. 1.2 the socio-economic and nutritional importance of the street food sector is now recognized by international agencies. However, perceptions of street foods in the population seem

much more complex and positive notions towards street foods as well as reluctance, suspicion and distrust can be found among consumers, authorities and vendors. In this study I often found street foods to be regarded as foods of lower standards compared to food from other eating establishments (e.g. restaurants and chop bars) and home cooked food; *“If it happens that your mother is cooking for you she will place the food on a table and even use a kind of lace to cover the food...your mother, she will ensure that everything is genuine”* and *“It is always better you eat in your own house...it is better, than the outside food ...the service is far far better ... It is extraordinary compared to outside food”* (FGD, males). The proverb *“everybody likes to eat from under the mother’s tripod”* was also used to describe the role of home cooked foods. Food cooked at home by the women of the house is always praised and enjoyed. Hence, the emotional attachment to home cooked food is strong and care for the food is perceived to be much better here compared to what street food vendors are expected to deliver. Hence, street food vendors were typically described as *“careless”* with food and not putting enough efforts into the process of producing it and mainly concentrating on gaining money.

Eating at home was also perceived to be the proper behaviour for a family and eating in the streets may signal problems in maintaining a typical family structure. Several married male customers therefore stressed that their reasons for buying street foods wasn’t a way of avoiding home cooked food made by their wives – which was considered to be a highly improper behaviour for a married man. Typically wives were working outside the homes and had no time to cook. Studies of acceptance of the street food sectors in various African countries by Fouéré et al. (2000) agrees in this explanation of social apprehension towards street foods; eating street food goes against socialization trends that binds ties between household members around a family meal. Street foods are therefore unaccepted as it is representative for individualized eating.

Because of the low social status of the street food people also perceive it to be socially unacceptable for higher status people such as chiefs and pastors to eat food from the streets: *“Especially the pastors, they don’t want to stand there...people will complain about them... Ghanaians are talkative. They can go and tell someone “I saw the pastor buying food, I saw the pastor doing this and that”* (interview with vendor 5) and *“Because of the kind of home he comes from it will not be good for him to eat outside...Let’s say a chief or say a manager, he cannot come and sit outside to eat”* (FGD, males). A high-social class customer from a nearby business cooperation also stated that eating in the streets was embarrassing to him since people from *“the slums”* can watch and he thus felt protected when eating in inside facilities such as restaurants, which were considered *“more according to his status and standards”* (Male customer Asokwa, 26th April). But common people also perceived it to be a degrading and socially dishonourable behaviour to eat in public:

“Corn - I can’t buy it and chew it on the street. I feel shy... you have to eat it in a very rough way (showing how to break the cone with his teeth)... Maybe I’ll meet someone and maybe the person knows me and he will say “See, I met this brother up here in this street and he was eating corn or

sugar cane like that” (shows how to eat roughly) and he will laugh at me... so if I want to chew sugar cane I will find somewhere to sit down and chew it” (Male customer Adom, 23rd April)

Such reasons why people feel exposed can be understood using the Goffman analogy: when eating in public you are exposing your eating manners and yourself and you are in danger of losing face which is socially demeaning. Eating manners are obviously not meant to be staged in public but kept hidden and to keep up the impression of one self in the public sphere and thereby avoid being ridiculed and socially embarrassed the customers therefore ‘hide’ when eating street foods; few customers were seen to stand visibly in the streets eating their street foods and several customers explained how they turn their backs to the public while eating or try to locate a hidden place or sit inside the food stands out of sight of the public. I myself was corrected several times by vendors when eating in public; not to eat food directly from a bag or not to eat while walking. It was simply perceived as ‘improper’ behaviours. Hence, even though the fast food business is built on concepts of eating away from home many people still take food from the stands to eat it at home. The reasons seem to be related with perceptions of losing social status and fear of social embarrassment and therefore protecting the impression of one self.

Witchcraft

A specific concern related to eating in public, was the danger of being exposed to witchcraft:

R(espndent)5: “When you do that (eat on the street) you are in a public place”

R2: “And all eyes are on you”

R5: “And not all eyes are good”

R2: “When someone is passing, he or she can add something to it. It is spiritual so you can’t see it”

R5: “If someone is passing and doesn’t have a good spirit, she can put some disease into the food.

Because you don’t have the eyes to see it, when you eat it, you can get sick” (FGD females)

The fetishist religion is the indigenous religion of Ghanaians and still practiced by many. But fear of witchcraft was only mentioned by few interviewed customers and more respondents expressed patronizing attitudes towards those believing in such witchcraft and other “*old-fashioned*” beliefs. However, it may be an important cultural remnant, which still influences and sustains peoples apprehension to eat in public even though they do not explicitly mention it.

Higher social status of Fast food

The recent introduction of *fast food* dishes in the street food sector is an example of a trend, which seems to *in-*crease the status of street foods and thereby adds to the variety of opinions of street food quality. The use of more expensive raw materials such as imported white rice and white meat (such as chicken) means that fast food is more expensive than traditional foods. The considerably higher prices of fast food allow richer customers to buy it on a regular basis and keeps unskilled workers from buying it as everyday food. Fast food is therefore a symbol of some social status and wealth and by

purchasing and consuming fast food consumers in fact position themselves in a higher social group. Some customers explained:

Facilitator: Let's say... someone comes to visit you when there is food at home. Would you take that person out?

R4: "Maybe my mother has cooked food, which is correct at that time; I can't go and say to my Mum 'Mum, give me some for the lady'. I will instead go and take the lady out. Even if my mum's money is there, I will take it and use it to go and eat with her"

R5: "Yes, You will go and buy fried rice for that person"

R9: "We have to let the visitor eat fried rice. It is food for the rich"

Hence, fast food holds quite strong symbolic values of status sometimes even ranging over home cooked foods. The social status of fast food is also influenced by certain ingredients such as lettuce and will be further analysed under the nutritional dimension

Personal trust in vendors

Due to the general sceptic attitudes towards the quality of street foods many consumers choose to buy street food from a known vendor and a social bond to a known vendor seems to be one of the decisive factors when choosing a trusted place to eat. This was also the case for vendors when choosing their suppliers; they all stressed trust as the main reason for choosing and maintaining a business relationship with them. Hence, trust *in persons* seems to transfer to and induce quite strong trust *in the food* quality.

Trust was often based on close interpersonal ties to relatives or friend: *"She is my friend - I will go and buy her food all the time"* (FGD, females) and *"The vendor is good because he is a friend"* (male customer, Abrepo, 24th April). But many vendors were also chosen and trusted on the basis of previous experiences which made consumers become regular customers: *"I know the vendor from a restaurant, where I used to eat... I know he is safe"* (male customer, Asokwa, 26th April) and *"I buy because I know the seller"* (FGD, males). Customers very rarely mentioned trust in vendors, based on vendors' knowledge and specific safe and hygienic food handling practices, such as washing or cleaning lettuce properly, washing hands when cooking, using soap for dishes etc. But in addition to assumed higher food quality, buying from a trusted vendor or supplier also yielded specific benefits such as larger portions, credits, special made orders etc.

These findings indicate that food hygiene is not the decisive factor for customers' and vendors' trust – rather they seem to choose vendors and suppliers partly because of a highly individual and emotional attachment. Personal trust thus seems to overrule and replace concerns and criteria of proper food handling and food hygiene to some extent. Later findings will reveal that other factors are also very influential. Trust also seems to add an additional positive aspect to the experienced

quality for customers and vendors, since attachment to a regular eating place or supplier provides everyone with a sense of belonging to a certain vendor or supplier.

Taste

The organoleptic experience of food such as *taste* is an important aspect for all of us when eating. However, taste was not highly stressed by street food customers as an important criterion for assessing street food quality. Rather taste was mentioned as a factor influenced by social factors such as good company when eating and commitments to a particular trusted vendor: *“The taste is so sweet, and the vendor is good, he is a friend”* (male customer, Abrepo, 24.4) and *“The one you have always been buying from makes it nice for you. That is why you buy from that person. When you eat it, it tastes nice to you”* (FGD, females). A few customers stated that taste was a co-decisive factor when choosing a new vendor: *“You must taste the food, taste how it is. If the taste is nice the customer will go there everyday and buy it”* (FGD, males). Sensory criteria were therefore quite incorporated into the social experience of eating foods but rarely a co-decisive factor for testing and trusting vendors.

Concluding remarks on social status of street foods

Positive as well as negative trends of social status of street foods can be identified. Suspicion and reluctance towards eating street foods are strong but increasing recognition of fast food as modern and attractive meals also exist. Hence, findings indicate that perceptions of eating and purchasing street foods indeed is influenced by social values and function to positioning one self in social reference groups as defined by Prigent-Simonin et al.(2005). Despite social and cultural apprehensions towards eating street foods it is still consumed in large quantities in Kumasi – and by the very same people who gave the above answers. Statements such as: *“I feel that the home cooked food is better, but I don’t have the time to cook for lunch”* (female, customer, 24th April) were frequently heard during fieldwork and it is thus obvious that *functional rationales* including convenience, price and necessity are important rationales as well which seem to overrule concerns of trust and social correctness when eating foods (see more in functional dimension).

3.3 Nutritional quality

In this study the nutritional dimension also includes signs of perceived humanistic food quality since these turned out to be closely associated with the perceived nutritional values of foods.

Data from this study seem to indicate that customers do *not* tend to buy street food for nutritional reasons only and do not often consider the nutritional quality as the key purchasing criterion. This finding is in accordance with those of studies in various other developing countries by Tinker (1997) and from similar studies in Kumasi (Olsen 2005). Comments like: *“People are generally not very concerned about what they eat. They are not concerned about what they get from the street food, which nutrients they consume. They are concerned to get a full stomach”* (male customer, Adom, 24th April) were often heard and in a recent interview for the Food service industry in Ghana the General Director of Ghana Health Services Professor Asoka stated that *“when Ghanaians eat, they want the*

food to fill them up” and states that nutritional intake and distribution isn’t in general considered by many inhabitants (Akosa 2006). Concerns of nutritional aspects of foods might therefore not be strong at all in the Ghanaian society, including the purchasing and consuming of street foods. However, even though the objective nutrition value of the food may not be the main criterion of purchasing street foods this study revealed that customers as well as vendors host many perceptions of nutritious aspects of street foods and are concerned with a variety of more or less objective perceptions of nutritional contents. Some examples from the field work are: cooking oil is perceived to be very dangerous producing malaria attacks in those who take too much oil in their daily diets. Mangos are perceived to produce diarrhoea and carry cholera bacteria and sachets of purified drinking water is often heard to be transmitting typhoid bacteria. Finally, persistent rumours circulate that chicken is infected with bird flue – especially meat coming in from the Northern countries. But all seem to agree that street foods satisfy the basic needs of the urban dweller. As with perceptions of food status, perceptions of nutritional values of street foods are therefore complex. Some are positive but in general street foods are perceived as low-nutritional and therefore sometimes damaging to health and seem to add to the above described negative social perceptions of street foods.

Some specific reasons for perceiving street foods as less nutritious were explained by several customers: *“Home cooked food is more nutritious; I am able to use many vegetables and use good products. Here they add sachets with spice mixtures which are bad products and they put lots of oil and too much salt. It is unhealthy”* (female customer Ayigya, 5th May) and *“The street food is not very good; they use too much chemicals like Maggie powder and canned food - even outdated ones”* (male customer, Ayigya, 22nd. April). Other reasons related to particular harmful cooking strategies e.g. vendors ‘disguising’ decaying vegetables in the food by using large amounts of spices. This practice was observed at several vendors who bought decomposing tomatoes in bulks for very low prices on the markets.

Nutritional and social status of foods: “Light and heavy foods”

Another frequently outspoken perception of street food was associated with its ability to satisfy a nutritional need:

R1: *“If I eat the home cooked food it will be in my body for a long time before I sense the need to eat again, but if I take outside food in the morning - it won’t take one hour before I feel hungry again”*

R5: *“Let’s take banku for instance. They will prepare it in such a way that it will become very, very soft. That is how they get to serve a lot of servings and make their money”*

R1: *“But the home food is very heavy so when you eat one ball you are satisfied. The in the outside food they don’t add a lot of ingredients”* (FGD, females)

Thus street food seems to be perceived as less filling. This aspect was in particular mentioned for fast food meals which was in generally spoken of as *“light food”* which *“doesn’t make you feel heavy”* after eating. Fast food is also branded in the media as a way for modern town people to get a fast,

light and fancy meal³ and from the customer segment observed it was obvious that such *‘light foods’* are more popular with younger, modern, richer, town people who have office jobs, who own small scale shops or are students. On the contrary, the traditional Ghanaian staple foods such as banku, fufu, yam, and cassava are considered to be *‘heavy foods’* and good for someone who *‘need his/her strength’* to do hard physical work. Low class people and workers in particular are therefore buying such traditional filling meals on the streets for very small amounts of money.

In this way perceptions of nutritional values of street foods are closely interconnected to the social status of food and people: fast food is associated with higher status low-physical active life styles whereas the cheap traditional street foods are perceived by many as low-status food for the poorer and the unskilled workers with physical active and strenuous jobs.

Apart from expensive imported brands of American rice and the attractive chicken meat, lettuce in particular seems to add to the higher status perceptions of fast food. Recently lettuce has been introduced to the Ghanaian diet with fast food and many customers see it as exotic and related with an attractive western lifestyle. The lettuce was by many described as a luxurious food item eaten on special occasions – even by lettuce farmers who have free access to heaps of lettuce in their own fields. With lettuce being a highly popular and attractive food item in fast food traditional vendors are now also introducing lettuce as an attractive side dish to traditional Ghanaian meals.

Lettuce is also perceived to be extremely nutritious and healthy. Customers and vendors described lettuce and other green vegetables as *‘giving energy’*, *‘balancing the diet’*, *‘making you strong’*, *‘giving you good eyesight’*, *‘giving you vitamins’*, *‘being nourishing foods’*. Two school girls explained what they had learned about such healthy benefits from foods: *“As it (lettuce) is added to the food it gives us some nutrients and it will give us blood and the food is also more tasty (R1). We are taught this... so when ever we go out we eat a little on our food (R2)”* (Female customers, Adom, 24th May). Thus many seem to feel that their diet and health status will be greatly enhanced by eating even small amounts of raw vegetables as topping on a dish of rice or beans.

Together with findings from the social dimension the nutritional aspects show that street foods are deeply embedded in and formed by perceptions of cultural appropriateness and social acceptance of foods. These are formed and challenged by new lifestyles, family structures and new nutritional patterns. And new food items are becoming symbols of such modern food culture and lifestyles.

Ecological food quality

Humanistic food quality is described by Prigent-Simonin et al. (2005) as an *“awareness of purchasing foods taking environmental issues such as less intensive farming and fair price trade into consideration”*. Such ecological food quality considerations were present in some, but minor degree

³ Spots in national news seen in Ghana during the field study.

in this study and were especially related to concerns of urban farming methods and safe crops. Three vendors (no. 2, 6 and 8) thus mentioned the risk of purchasing rice and vegetables grown with excessive amounts of pesticides and fertilizers and one (no. 6) strongly believed that chemical residues could be traced in the lettuce why he was observed to cut parts of the lettuce away⁴.

However, none of the vendors had exact knowledge of farming methods used to grow the specific vegetables they buy including source of irrigation water, fertilizers, pesticides, fungicides etc. and no vendors had ever enquired their regular suppliers about it. Some felt that such information was unavailable to them, some felt uneasy to enquire suppliers but most vendors automatically trusted suppliers and did not question them or the quality of supplies⁵. From interviews with lettuce sellers in the market and from shopping trips with vendors it was clear that most suppliers do not have knowledge at all about the ecological quality of the food. This also seem to be the case for farmers and market women growing and selling the vegetables who's awareness about occupational health and environmental risks (e.g. close contact with pesticides or waste water used for irrigation) is very low (Interview with staff from Institute of Agriculture, KNUST, meeting in farmers association , Amoah et al 2003). This finding suggests that vendors put faith in trusted relationships to suppliers and that trust seems to replace concerns of ecological risks – even when vendors or suppliers obviously do not have knowledge on such potential risks. The reason might be that there are no active official organisations negotiating and ensuring fair prizes or ecological quality on behalf of vendors or consumers in Kumasi. Vendors, suppliers and customers therefore have to base business agreements and relations solely on personal relationships and trust in such contacts (see more in ch. 3.5).

3.4 Hygienic quality – etic and emic perspectives of food safety and hygiene

3.4.1 Etic food Hygiene: Observed food hygiene and food safety practices

All official hygiene recommendations are based on scientific micro-biological explanations and are therefore etic in their nature not taking peoples individual perceptions of food safety into account. This chapter will first sketch out risk practices according to such etic perspective and later elaborate by investigating the underlying explanations of observed food hygiene and safety behaviours.

An example of a comprehensive but uncomplicated guide to safe food practices is “*the five keys to safer food*” of WHO (who int 2) which sums up the most important recommendations for producing safe food: 1) Keep clean, 2) Separate raw and cooked food, 3) Cook thoroughly, 4) Keep food at safe temperatures and 5) Use safe water and raw materials. During observations these and other core risk

⁴ Official standards for maximum residue limits of pesticides does exist in Ghana, but monitoring of residues is virtually non-existing and exceeding and worrying levels of pesticide residues have been found in vegetables at urban markets in Ghana (Amoah et al. 2006). The Ghana Institute of Horticulturalists and Institute of Agriculture of KNUST are trying to decrease amounts of used pesticides in urban farming by teaching farmers in Kumasi about safe spraying practices and the adverse health effects from pesticides.

⁵ I attended several shopping tours with vendors and asked them all about the nature of business relationships and found no signs of expressing such concerns. However, there might have been reluctance towards telling me about disputes or negotiations with suppliers which I have therefore not been able to record.

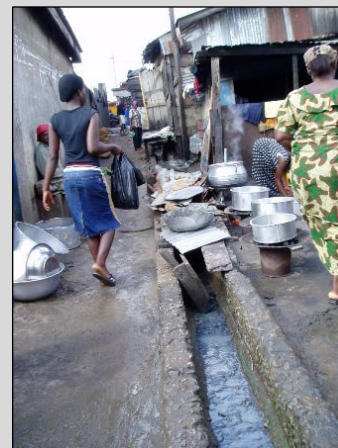
practices described by international food standards⁶ were identified. The most prevalent risks of unsafe cooking practices were related to *cross-contamination* of food and lack of *hand washing* during *pre-cooking* and *serving stages* and will be described in the following paragraphs.

Dirty cooking facilities

Since the cooking and vending area of a typical street food stand is very limited (3-5 m²) floors, outdoor areas, improvised furniture and other surfaces are therefore often used for multiples purposes. Cooking and storing of foods were thus frequently seen to be conducted on benches, stools, shelves, water gallons and on cloths or clothes. Foods were also often seen to be kept directly on the ground being exposed to various sources of contaminations. This issue seems particularly relevant for vendors cooking in outdoor kitchens, since these are often very congested with crowds of people passing through, animals running loose and very poor sanitation and drainage facilities adding to the potential danger of cross-contamination during cooking processes (see Box 7 for example). No vendors had garbage bins available and scrap was therefore left in piles on cooking and vending premises, gathered and taken to dumpsites in the evenings. Compared to cleaning kitchen facilities efforts are much greater to ensure a tidy vending site, as also described in Box 4 and 5. Vending premises are always kept tidy and in order by dusting of, sweeping, clearing away refuse and washing dirty utensils as soon as food is ready for customers to buy and eat.

Box 7: Example of dirty cooking facilities in outdoor kitchens in town Centre

More than ten kitchens operate in the same small area of app. 30 m² and the whole area is scattered with scrap from food preparations. There are no toilet or water facilities and cooking staffs are therefore seen to squat over the gutter passing between the pots and pans when they need a toilet. Animals such as hens, cats and goats can be seen running loose between the pots eating from the scrap. There is no drainage of the area and streams of dirty water from the dish washing and cooking are crisscrossing the area and once in a while emptied into the main gutter. Raw meat is chopped on a piece of carton on the wet soil, salad is lying on the ground before being chopped just next to the leftovers from chopping the meat and ready dishes are exposed to the sun and dusty air in uncovered pots for hours.



Separation of raw and cooked foods

At all vendors there was no consistent separation of raw and cooked foods when using cutlery, fridge facilities, storage space or crockery and on all vending sites knives and chopping boards were observed to be used for meat as well as vegetables, raw as well as cooked. One explanation is that crockery is limited and hence vendors continuously shift raw and cooked foods from one pot, basin or

⁶ For example in *Codex Alimentarius - Food Hygiene*, FAO (2005)

board to another. Furthermore, cleaning of boards was often done by wiping it “clean” with cloths, which were often dirty pieces of textile. Two vendors washed crockery and knives with soap frequently while others were observed to wash crockery only when finishing food preparations.

Hand washing and handling food with bare hands

In 7 out of 8 observed vending sites vendors were not observed to wash hands regularly. Vendors often had specific reasons for washing hands such as washing hands after changing a diaper of a baby (vendor no. 1), washing hands before presenting one self before customers to announce the daily menu (vendor no. 3) or following religious rules of purification (vendor no.2 and 6). At 4 out of the 8 vending sites hand soap was available but not used by any vendors or staffs. Soap was instead offered to customers, to me, to friends or business relations before or after eating. Only two vendors were observed to use soap after visiting a toilet (both Muslim) and most vendors actually attempt to avoid visiting toilets during working hours since they find it disgusting.

The risk of food contamination was increased by the common practice of using hands for serving foods. All vendors used hands for serving the ready meals to some extent e.g. when grabbing the fried chicken, yam, spaghetti, or salads with hands. 6 vendors actually had thongs or ladles available but they were used irregularly or fingers were preferred (see example in box 8). All vendors also used unwashed hands when preparing meat and vegetables.

Box 8: Example of chain of unsafe hand hygiene practices at vendor 3

During the cooking preparations the staff uses her hands to grab the raw meat from a plastic container to fry it in a pan. She wipes her hands ‘clean’ in a cloth and grabs the raw vegetables in another container to garnish the food. She then turns to the fridge to take out a sachet of drinking water for a customer and receives the payment. The customer drinks the water straight out of the plastic sachet without washing it. When frying is finished the staff tastes the food by taking a spoonful of rice from the pot with her fingers, she eats it, licks her fingers and then continues with the job. She is not observed to wash hands before, in between or after any of these practices.

Traditional Ghanaian food is eaten using fingers and at two vendors customers therefore ate the food with fingers out of plastic plates. Customers were offered cold water to rinse their hands before and after eating but very few customers did so. Hand soap was not available. Hence, together these hand washing practices greatly constitute a high-risk source of food contamination since faecal material and other harmful bacteria from dirty hands of the vendors *and* the customers themselves is easily spread from hands to the whole food stand and ultimately the foods.

Cleaning vegetables

Cleaning procedures of vegetables consumed raw is of particular great importance to the microbiological food quality since pathogens such as helminth eggs, E. coli and other harmful bacteria from farming soil, waste water or faecal material can be transferred directly to the customer. It is true and common knowledge among vendors that rinsing vegetables in a solution of water and

vinegar is effective⁷ but salt and lime juice is also known to have disinfecting effects. All vendors and staffs practiced some of kind of vegetable cleaning procedures; washing in pipe born water, washing in salty water solutions or using vinegar. 4 of the vendors also washed the vegetables twice; first to wet vegetables and again to rinse off the dirt. Recommendations of cleaning practices thus seem to be known by vendors. But at all vendors observed the cleaning procedures were superficial; vegetables were only dipped or left in the water for few seconds, leaves were not always separated or inspected and dirt is not rinsed off. Some vendors also practice the cleaning in ways which might risk *adding* dirt to the vegetables by first washing it in salty water and later washing in dirty water, washing lettuce in salty water and then drying lettuce leaves with dirty clothes or using the same water for rinsing all vegetables during a whole day. All vendors were also very inconsistent in adding salt or vinegar to the water and often used a minimum of vinegar. Hence, few vendors were observed to practice high standards of cleaning vegetables. Many other vegetables consumed raw were not cleaned at all.

Covering foods

At all vendors I frequently observed ready foods such as boiled rice, stews and salads being stored without protective lids and fried chicken was usually kept uncovered in plastic containers exposed to flies etc. This was done even though some vendors had lids available. Three vendors kept chicken correctly covered in sieves with lids or under plastic sheets most of the time.

Temperatures

WHO recommend thorough reheating of food and cooking at minimum of 70 degree Celsius to ensure killing of harmful bacteria (who int 2). Street vendors typically cook large portions of food in the morning and store and sell throughout the day. Most fast food vendors reheat rice by flash frying it just before serving it (frying it hard for very short time) whereas traditional vendors do not reheat. Chicken and meat stews are always served cold or tepid. Some vendors use ice chests to keep food hot and protected but the majority of vendors store food in what ever they have available (i.e. pots, pans, plastic containers, buckets etc.). Foods served in the evenings have therefore typically been on display under tepid temperatures for many hours and maybe been re-heated for a very short time. Together with practices of not covering foods and lack of hand washing these practices greatly enhance the risk of introduction, growth and survival of potentially harmful bacteria and hence unsafe foods.

Water sources and dish washing

None of the observed vendors had direct access to potable water at the vending site. Vendors collect water from public taps in the neighbourhoods in plastic gallons or buckets or bring water from their houses. Some pay a fixed amount a month for fetching water others pay pr. gallon. Prices ranged between 300-500 Cedis (app. 0.03-0.05 USD) pr. gallon (app. 4.5 Litres). All vendors reported that

⁷ IWMI is currently researching into effective methods of treating lettuce and vinegar solution seems to be most effective (IWMI unpubl.)

water was affordable to them and had good water supplies - except from vendor 7 who had problems with irregular supplies due to rationing on water by authorities⁸. However, all vendors found it troublesome and very time consuming to manually fetch water several times a day.

The 4 vendors who offered customers to eat at the vending site (no. 1, 3, 7 and 8) had cold water available in buckets for washing dirty plates. Plates were washed in soapy water and rinsed with clear water. But the amounts of water available were limited in three out of the four places and water not shifted regularly. Plates were therefore often greasy after washing. This situation is confirmed by the KMA staff to be a frequently met condition and practice among vendors.

Concluding remarks on etic food hygiene

These findings show that most vendors apply some of the most important practices of food hygiene such as ensuring tidy vending premises, fetching water regularly, and washing vegetables. Recommendations on hygienic vending premises and safe food handling practices thus seem to have been introduced and known to vendors in some degree. However, it is also clear that many hygiene practices are adjusted to suite practical everyday work routines such as flash frying rice, washing vegetables very briefly and with little amounts of salt or vinegar). Street food vendors therefore have problems ensuring complete safe food hygiene as described by scientific standards and practices thus possess potential risks to customer's and vendors' well-being.

But if we wish to find out for what reasons practices are adjusted we need to grasp the underlying attitudes and perceptions of safe and unsafe food practices of the individuals and find out how perceptions are linked to the these everyday decision-making. The next chapter will therefore engage in some aspects of vendors and customers' emic constructs of food safety and food hygiene.

3.4.2 Emic food hygiene: Perceptions and attitudes towards food safety and hygiene

Perceptions of disease transmission

In this study all vendors had some knowledge on disease transmission and food born diseases and perceived selling food as a sensitive matter: "*Food is very delicate since it could be the cause of a lot of diseases*" (Vendor 1). Vendors were also highly concerned that business would be threatened if customers fall sick from their food and start a bad rumour. The majority of customers were also concerned about health aspects of street food vending. They had all heard about cases of customers, friends or relatives falling sick from street foods. Most vendors mentioned the risk from serving old and cold foods and of cholera spreading from bad water sources and typhoid coming from sick persons. Customers also mentioned food borne diseases such as diarrhoea and fevers to be common.

But it was also quite clear that vendors were very reluctant to describe diseases such as typhoid and diarrhoea as related with eating contaminated street foods from contaminated vendors and diarrhoea

⁸ The vendor operates in Zongo, one of the poorest and least developed areas of Kumasi, with many logistical problems such as unpaved roads, dilapidating gutters, poor housing and irregular water and electricity supplies.

was usually not mentioned unless probing specifically and repeatedly for it during conversations and interviews⁹. When describing causes for diarrhoea most vendors only perceived diarrhoea to happen for people having “*sensitive stomachs*” or who are “*allergic*” to specific food items such as very spicy food, chillies, cassava or groundnuts and in general they perceived such customers’ health status to be “*weak*” and “*easily disturbed*”. *Weak stomachs* were particularly referred to with children. Furthermore, many vendors did not acknowledge sources of disease transmission from within their own stands: “*It (contamination of food) can happen if you have flies around. I have seen nothing else here which can contaminate the food*” (vendor 4) and “*There can be no problems if you cook it well*” (Vendor 7). Hence, vendors expressed a degree of optimistic bias when not believing that their food could be the cause of diseases. When asked how to prevent contamination, no vendors stressed efforts to strengthen the general hygiene but instead stressed efforts to improve the attractiveness of the food stand to give customers the impression of a safe and good food stand (see more in ch. 3.5).

Contrary to the vendors, the majority of customers strongly believed that eating contaminated street food can easily cause an ‘upset stomach’, ‘stomach pains’ or a ‘running stomach’ which was the commonly used phrase for diarrhoea. Many had had incidences themselves and from interviews it seems to be a relatively frequent event to experience a ‘running stomach’ after eating street foods.

As described in ch. 1.3 most food related diseases are not reported to health authorities and the exact number of food borne diseases is therefore unknown. The above perceptions of disease transmission indicate that an obstacle to improve food safety is very likely associated with vendors’ lack of awareness and acknowledgement of food related risks. It also indicates why incidences of food borne diseases are not reported to authorities: customers are quite used to experiencing stomach problems attributed to eating street foods. Some people even perceive it to be normal and inevitable for children to experience this once in a while due to their particularly sensitive stomachs.

Risk avoidance strategies

Despite these perceptions it was obvious that consumers’ choice of street foods and vendors’ perceptions of food quality are quite influenced by concerns of food safety and hygienic food quality. The majority of customers interviewed preferred to *see* the food preparations to evaluate the safety of the food themselves by overlooking the cooking and the cooking environments: “*I buy here because I can see how they prepare it. I can see that they serve it freshly. I can order it and they make it...*” (Male customer, Adom, 24th April). But most consumers realise that they can not have full insight into the quality of the food since cooking premises are often located in private quarters of vendors or in street kitchens and later brought to the markets or vending stands. They therefore do not know how and under which conditions the food has been prepared and stored. Lack of such knowledge and uncertainty was described by many as a major concern:

⁹ The reason might be partly due to the awkwardness of speaking about diarrhoea. However, vendors did not seem embarrassed to speak about it, once it was brought up in an interview.

R1: *“I would prefer to see where they cook... We don’t know where they prepare the food. All we know is that they have brought the food”*

R5: *“As for the particular place they brought it from, it could be that the place is not neat”.*

R1: *“How can I go to Kwadaso (name of quarter) to check how she cooks before I decide to buy it? ...You don’t even know whether it is leftover food or not. Some of these sellers they will reheat it and sell it to you... You won’t know...” (FGD, females).*

Uncertainty of food safety was mostly related to the appropriateness of cooking premises (e.g. cooking near gutters), safety of ingredients, improper behaviours of the vendors during cooking (e.g. using dirty utensils) and safety of water sources. To cope with the uncertainty different protective strategies were expressed by the customers. Some had fatalistic attitudes towards the potential dangers of consuming street foods: *“Yes, I am afraid of getting sick from food but I can do nothing. I have to eat because I have no time to cook” (Female customer, Adom, 24th April).* The Ghanaian proverb *“Ani ahu a, enyetan”* meaning *“If you can’t see it, it does not hurt you”* was also frequently heard from customers describing a typical carefree reaction towards not being able to monitor cooking premises and discovering sources of contamination. Hence, customers choose to ‘close their eyes’ to potential health risks: *“I don’t think too much about the health risks; I just like to try out different new things...I just go for it...I try to see the positive things; If something happens to me I try to make it a good thing” (Male customer, Ayigya, 24th April).* Religious faith was also mentioned as a protective strategy: *“I can only pray to God over the food. Only he can know if it is safe” (female customer, Abrepo, 4th May).*

These avoidance and protective strategies and rationales clearly indicate that decisions and evaluations of food quality are made in an everyday context where people sometimes choose not to be concerned with, or can do nothing else than, ignore risks such as low food hygiene. A degree of optimistic bias was thus found as some people do not acknowledge risks to be of severe significance for them. However, the majority of consumers are in fact very concerned with the safety and hygienic quality of food and a variety of categories of dirt and related concerns and perceptions were presented. These are listed in the below table and will be elaborated in the following text.

Categories of dirt: natural and supernatural, environment and body

Except from one, all sources of dirt mentioned among vendors and customer (summarized in table 1) can be categorised as *natural* and *impersonal sources* of contamination since dirt stems from nature, foods or the human body. Natural sources of dirt can be further categorised as dirt from ‘*the environment*’ (part A and B, table 1) and ‘*the body*’ (part C, table 1). The exception is the category of evil eyes, a *supernatural* and *personal* source of contamination, stemming from spiritual powers of a

witch or sorcerer. This indicate that interpretations of dirt and contagions in a Ghanaian urban context follow the categorisation of the Indigenous Contagion Theory of Edward Green (1999); the vendors and customers emphasise natural contagious agents and host many semi-microbiological hygiene rationales and interpretations of dirt and disease rather than supernatural categories of contagions.

Germes in food

A crucial part of the ICT trend described by Green is the focus on ‘the tiny agent’ or ‘tiny animal’ as the cause of disease. Green found beliefs in tiny agents as disease carriers through out the African continent without perceptions being directly related to western perceptions of microbiology (Ibid: 38ff). In this study customers and vendors were very concerned with such ‘animals’ or ‘germs’ in food causing diseases (i.e. germs from the soil in lettuce, germs from meat, germs from saliva, germs on hands from toilet and germs in cold foods): *“Lets say that when I washed this lettuce maybe I didn’t see all worms and proceeded to cut and serve it. Some customers ...may get sick from eating the unseen worms” (vendor 1)*. No respondents ever used biomedical terms such as ‘micro-organisms’, ‘bacteria’ or ‘virus’ but instead referred to tiny “worms” (*sonsunu*) or “animals” (*amoa*) hiding in foods. Vendors therefore seem to know that harmful agents can hide in food and not be seen. However, they do not believe that germs can be too small for the human eye to detect (e.g. bacteria and viruses):

I(nterviewer): “What about the other vegetables - are there also animals in those?

R(espondent): No, they can not hide on them, there are no animals there.

I: “Is it possible that there are animals on the vegetables which can not be seen”?

R: “No, you can always see if there are animals after you have washed them” (staff at vendor 4)

R: “In the lettuce, animals are able to hide in the leaves, which you can see with your own eyes when you watch them drain away with the salty water” (vendor 2)

Most other vegetables than lettuce (i.e. cabbage, carrots, peppers, spring onions) were perceived to be too “straight” or “closed” for animals to hide in and hence not treated with salt or vinegar. These beliefs imply that recommendations of treating all vegetables consumed raw are modified by vendors’ perceptions of feeling capable of controlling this health risk by *looking* for animals. Finally, vendors were all found to host very strong beliefs in the effectiveness of vinegar or salt as a ‘miraculous’ methods for killing everything harmful in the lettuce - even when added in very small amounts. Inability to pay for vinegar and perceptions of vinegar and salt decreasing the quality of the lettuce

Tabel 1: Categories of dirt

Part A	
Dirt in the vending Environment	Gutters Dust Flies Pests Refuse
Part B	
Dirt in the food	“Animals”/”germs” Soil (In vegetables and meat, cold foods and leftovers)
Part C	
Dirt from the body	Saliva Dirty hands Dirty clothes Dirty nails, loose hair liquid from the nose Evil Eyes

were also mentioned as reasons for not complying with recommendations of always treating vegetables.

Hot and cold foods

Many vendors and customers knew about the harmful effect of germs in cold foods and hot foods are therefore perceived as safe and healthy and statements such as *“The food has to be hot, so no germs can harm you”* or *“germs and hot food is incompatible”* were often heard. The majority of vendors and consumers presented explanations which match biomedical explanations of adequate temperatures and germs resistance to heat such as: *“germs are killed when food is hot”*. But other more practical and intuitive rationales also exist among vendors: *“When we fry it is not possible to go near for the flies because of the heat of the oil”* (vendor 4) and *“I have to keep the food hot...Because the flies can not sit on it...”* (Vendor 8). However, very few vendors and customers found it necessary to practice reheating even though food had been cooked hours ago. Reasons were mostly practical such as no heating facilities available at homes or at vending stands. But vendors also had concerns about the quality of food when reheating: *“I am not reheating it, because people will not like that. The chicken will be soft”* (Vendor 6). When reheating was carried out flash frying was perceived to be adequate since the food turns very hot within very short time.

Perceptions of hand washing practices

The majority of vendors and customers perceived it to be a *“wrong”*, *“un-neat”* or *“not fine”* behaviour to use hands for grabbing and serving food and many vendors were therefore aware of not using and exposing dirty hands when serving customers. The majority of both vendors as well as customers also knew of risks of contaminating food with faecal matter via dirty hands and many customers therefore said they would avoid vendors using hands for serving. However, it was possible to identify diminishing attitudes towards the importance of keeping clean hands and avoiding using hands for serving: *“I use the left hand for the money and the right one for the food... people don’t like it that way...but on my side, I don’t think there is anything wrong in using one hand for everything”* (Staff at vendor 8) and *“I use the same hands to cook so why is it not good enough to use my hands to serve them?”* (Vendor 7). Such attitudes were found among staffs and vendors with no schooling and no exact knowledge of the dangers of contaminating food with dirty hands. They were well aware that customers generally disapprove of their behaviours but did not see any reasons for changing routines.

Practical reasons for not washing hands were frequently mentioned. The convenience of using hands when serving in a hurry was one decisive factor: *“sometimes when there are many customers and I am busy I choose to use my hands because you can just grab it like that”* (staff at vendor 7) and most vendors also found it unnecessary to wash hands if they didn’t visit a toilet during the day. Most vendors and customer also agreed that washing hands with soap during cooking and before eating makes the hands smell of soap and the food taste bad since it is traditionally eaten with fingers. Hands are therefore often washed without soap, if washed at all. Even today with people eating non-

traditional foods with spoons, knives and forks and vendors serving food with thongs and other utensils, people still tend to uphold such hand washing patterns.

Finally, hand washing just seem to be a totally overlooked aspect of food hygiene among all parties and within all types of eating establishments in Kumasi!¹⁰

Despite actually having knowledge on risk of contamination very few customers and vendors extended their concerns to actually washing hands during cooking when not visible to customers. Very few of the customers paid attention to this aspect, and included the need to wash hands in their descriptions of a neat and hygienic vendor or demanded hand washing from vendors. Once again the distinction of visible front stage and invisible back stage hygiene practices seems evident; Presenting clean hands and neat serving manners to customers is a vital part of the impression management to elude the perfect front stage and adds to the extreme focus of eliminating any traces of dirt in the immediate visible surroundings. Furthermore, customers and vendors seem to behave in a polite and professional relationship and customers therefore do not question the standard of a vendor's hygienic practices.

These findings on germs in food and hands washing gives examples of how vendors operate within semi-microbiological rationales being highly concerned with contamination of foods from contagious agents. Messages of keeping food hot and washing hands to avoid such dangers are also known to most vendors and customers but findings show that recommendations are moderated, overrules and understood in the light of everyday practical judgements (such as flash frying as an effective way of reheating, covering food when convenient for work routines, keeping flies away by heating, strong beliefs in vinegar as a 'magical' mean of treating vegetables, serving food with hands when in a hurry and not using soap because of the smell). Furthermore, the awareness of back stage and front stage behaviours clearly influence hygiene practices in a negative way on back stages – but in a positive way on front stages. Intuitive and practical rationales of vendors and customers which decrease and increase the hygienic standards could therefore be a focus for future hygiene promotion activities (see more in ch.4).

Order, neatness and appearance

In conversations with customers and vendors the categories of *visible features of dirt* in part A of table 1 were particularly stressed and repeatedly mentioned as most important for food hygiene. Few *practices* endangering food safety were mentioned (such as lack of hand washing, washing of utensils etc.). As a result of this focus a frequently chosen dirt and risk avoidance strategy was to asses the general visible impressions of vending sites, vendors and foods – often referred to as the 'neatness': "What we do is to look at the vendor. If she is neat and where she cooks is neat then the food will also be neat"(FGD females). And:" I look for neatness; whether they cover the food, the cooking

¹⁰ Field studies among low, middle, and high class restaurants of Poluektovas (2005) as well as other street food vendors (Olsen 2005).

environment, whether the person selling is dirty or clean, no rubbish around and no flies” (female customer, Ayigya, 5th May). The same criteria and perceptions were expressed by vendors; *“You have to sweep the whole place and wash you thingsBecause when people come and eat....The first thing is they will look if it is neat” (vendor 6).* Hence, in general ‘neatness’ described an all-inclusive state of order and correctness in which all dirt had to be eliminated: *“The person ...must be in order, everything must be made in order. Because if I go and buy food and realize things are not neat, I won’t buy from that place again” (FGD, males)* and *“She (the vendor) will remove anything associated with dirt from the selling place before she will serve. She will make it neat” (FGD, females).* Neatness and eliminating dirt was therefore often a purpose per se for vendors and customers, without them necessarily reflecting about possible health benefits. This finding clearly show that hygiene is far from always verbalized as a health concern or motivated by potential health risks. Rather ‘neatness’ refers to efforts of maintaining a system of acceptable order as described in ch. 3 by Mary Douglas. Dirt is to be controlled and hygiene or ‘neatness’ secured by upholding such systems.

But focusing so strongly on the visible neatness of the immediate vending surroundings and not the “unseen” kitchen premises, also exposes the clear distinction between dirt avoiding behaviours on back and front stages. Hence, vendors’ efforts to combat dirt, maintain order and present neat front stages have now turned out to be a central underlying motivation for most hygiene related behaviours. The risk perceptions and avoidance strategies used by customers’ seem to support this distinction; they too focus on a clean front stage as the most important criterion when choosing a safe vendor and rarely intrude on the back stages to ensure safe food production.

The strong emphasis on presenting spot less front stages and tolerating unhygienic back stage behaviours might seem irrational. Parallel findings were pinpointed by Van Der Geest who labelled the paradoxical dirt-managing behaviour of Akan people in Ghana a **‘hygiene puzzle’** (Van Der Geest 1998). Like vendors even educated health personnel were able to ignore filth and dirt and yet be immensely concerned with inducing an attractive appearance while working (e.g. by ignoring dirty toilets on hospitals but wearing clean uniforms). In this study the attitudes of consumers seem to add to the puzzle since they also place strong emphasis on the front (aesthetic bodily appearance of vendors and food stalls) and less about the hygienic conditions of the back stages. Furthermore, vendors as well as customers seem to agree that assessing neatness does not include the general neatness of the surrounding public space. An example was FGD members who rated hygienic vending surroundings as a strong criterion for choosing a vendor but were recruited while purchasing fast food on or just in front of an open public gutter – which did not “belong” to the vending arena. Finally, the hygiene puzzle can be further elaborated with the fact that the physical separation of back stages and front stages is almost non-existing in a street food stand: The back of a vending station can be readily observed by any one who wishes to - just by peaking inside or behind the food stand. Hence, customers can not avoid actually seeing it - but do not seem to see it at all.

The Goffman analogy can explain many trends in this puzzle; according to him we are all playing parts in the ‘everyday show’ in which we perform social roles, routines and impressions. Often it is done unconsciously and without questioning the meaning or relevance of our own or others behaviours. Here, vendors and customers are performing their roles, fulfilling the impression of a professional vendor-customer relationship. To “keep up the show” vendors and vending stations must therefore appear neat and thus professional when exposed to and in interaction with consumers.

Functioning in such professional relationship also entails the customers’ natural trust in and acceptance of the impression and professionalism of the vendor. Even though customers apparently do observe the backstage (you can hardly avoid it!) no customers will therefore actually intrude and actively assess and question the vending premises or practices of a vendor. The customer therefore ‘blindly’ accepts the impressions projected to him/her on the front stages. Put in other words; as a customer you are not expected to jump behind the counters to check on the vendor; whether he has cleaned his kitchen, if he washes his hands etc. – one naturally behaves with tact as a “professional” customer and keeps the eyes away from assessing anything else than what is immediately visible to him. And just think about it: This is actually a complete routine behaviour for many of us. We usually do not walk behind the counters to see the kitchen or even peak into it if we are purchasing take away foods. Usually we will stand in front of the counter and expect the vendor to do his work professionally and routinely. Thus, the physical distinction between stages needs therefore not to be physical or controlled as Goffman point out - it is upheld by vendors and consumers own actions and attitudes.

Concluding remarks on the hygiene dimension

Observations and interviews have shown that ‘*neatness*’ also refers to components not directly related to hygienic concerns of dirt and contamination. Some of the features of dirt stemming from a vendor (as listed in table 1) were hygienic concerns (such as saliva in food), but many of the features were also connected the general image and neatness of a vendor (such as clean clothes, neat hair and nails). Hence, quite strong aesthetic and moral criteria about the appearance, manners and personal qualities of the vendor can also be identified. Similarly, vendors and customers often referred to *neatness of food* as including hygienic concerns of ‘germs’ but also very often the purely aesthetic impression of the foods. Such aesthetic factors will be further elaborated in the next *aesthetic dimension*. However, many statements from customers and vendors are overlapping these two dimensions. For example when customers state that garbage around the vending site is un-neat: it looks un-aesthetic and is at the same time perceived to carry a potential danger to food safety, since it attracts pests etc. It is therefore important to have in mind that these analysis categories are not rigid, but rather interlinked and interacting.

3.5 Aesthetic quality

Criteria of aesthetic appearances in this study concerned the aesthetics of the vending environment, the food and the vendor him/her self.

Aesthetics of vending environment

Keeping an aesthetic stand and environment was typically used by vendors as a business strategy to attract customers offering an appealing environment; *“Take for example when the customers come and see a very neat place- it will attract them and it will look very nice and be very appealing for people to come”* (vendor 3). This vendor very clearly expressed the underlying attitudes of many vendors’ practices; creating aesthetic environments is rated over efforts to create hygienic cooking environments. She explained: *“Hygiene is number two. The hygiene is more about how to keep food safe and closed. You can come to a very clean place and the food is still not kept safe. It will still look attractive, but the food is not nice”* (vendor 3). Such statements also show that vendors are aware about the differences of *neat* and *safe* food and sometimes make this distinction when working – prioritising neatness before safety. Similar statements were heard from customers: *“Neatness first and good food next”* (FGD, males) who use the aesthetic appearance of the vending stand as an overall guiding criterion for choosing a vendor.

Vendors were all asked how to improve the standards of food vending and their enterprises and they all mentioned improvements of the aesthetic appearance of vending structures i.e. painting stands, making new and flashy logos and establishing neat seating areas for customers: *“I wish I could paint the place... some people are shy to eat in the open place so I wish I could provide a covered area for them to eat”* (vendor 1). Hygienic improvements were seldom prioritised and vendors usually did not perceive alterations of hygiene related practices as of major importance for the standards. Instead improvements which could attract more customers and add customers from higher social segments were stressed and many vendors therefore naturally rated funds as the overall barrier for making improvements.

Aesthetics of foods

Aesthetic values were also expressed towards how to present foods in artistic formations; arranging fried meat in pyramids, colourful salads, and numerous jars, bottles and pots arranged in lines and figures on shelves and all vendors underlined the importance of presenting foods in such attractive ways: *“When the customers come and see the way I have arranged my things they are attracted...I arrange them well - the mayonnaise, soy sauce and tomato ketchup bottles”* (Vendor 5). Lettuce was in particular perceived as attractive because of its refreshing colour and exotic impression. Most customers agreed that such presentations are beneficial when attracting them to a certain vending place: *“I think it is necessary; the way he (the vendor) arranges it can attract you to the food”* (FGD, males). At the same time all vendors and majority of the customers knew about protecting food from ‘germs’ by covering it and putting food on display in open air for many hours obviously carries potential risks by exposing it to various sources of dirt. Still very few customers and vendors seemed concerned and many customers were observed to buy uncovered foods exposed to flies, dust, fingers etc. Only one customer with extensive knowledge on food hygiene and healthy diet said: *“It is not necessary because flies can get to the food and it will attract diseases. Dust settles on the food and it*

becomes polluted or contaminated. Who ever eats it will have troubles afterward, so it not important they do that (put food on display)” (FGD, males). Other participants in the focus group did not host the same radical opinion and stated that they were not so worried about this risk.



Examples of decorated stands and foods arranged aesthetically

Aesthetics of vendor

Neatness also applied to the aesthetic impression of the vendor and was associated with hygiene related values such as ‘cleanliness’ as well as purely aesthetic values of ‘beauty’. Hence, vendors and consumers described a ‘neat’ vendor as an appealing person with clean clothes, clean hair, clean teeth etc.: *“I look at the person. He/she must look perfect as he /she stands cooking and selling... The dressing he/she wears when standing by the food has to be nice. He/she must look neat!”* (FGD, males). The bodily features of dirt mentioned in Part C of table 1 showed that most bodily sources of dirt are in fact disgusted because of its ‘ugliness’ and less for its potential hygienic danger. Saliva was the only category of dirt from the body which was disgusted mostly for its health danger since people perceived saliva to transmit all kinds of germs and diseases. A talking and shouting vendor was therefore perceived as highly unhygienic: *“when you are cooking and talking and shouting, you can introduce dirt to the food...if you are talking, you can spit for example”* (vendor 5).

Aesthetics and morality

Finally, ‘neatness’ also had strong moral connotations when customers and vendors referred to personal ‘pureness’ and positive personal qualities of the vendor such as ‘neat manners’ and a sound moral attitude. Neatness thus implied being a friendly and pleasant vendor who treats customers neatly by giving credits, adding extra food to a portion, reacting positively on complaints and greeting customers. A morally neat vendor was described as a person who takes care of his/her reputation and is careful to appear and act decently towards customers e.g. by being submissive to their demands: *“In some places they (the vendors) are too proud. They don’t serve you nicely, they don’t know how to talk and ask politely. They are not acting neatly to people. (male customer, Adom, 24,4) and “you need to be patient and humble in doing what the customers say”* (vendor 6).

The relevance of personal moral quality was also found by Van Der Geest who stated that ‘neatness’ for Ghanaian Akan people seem to signal bodily cleanliness as well as being a moral indicator of purity and morality (Van Der Geest 1998). This explains why vendors are extremely concerned to eradicate all sources of dirt since it is not only un-neat for hygienic reasons but also ‘sticks’ to and impair the personal impression of them. Similar concerns were described and prioritised by customers in the social dimension: eating under their social status, exposing their eating manners in public and eating in dirty surroundings will also sully the impression of their morality. Vendors’ efforts to appear morally healthy and consumers’ efforts to avoid moral disgust therefore seem to promote the avoidance of social rather than physical parasites as formulated by Curtis (Curtis 2001b).

3.6 Functional quality

As findings have shown customers host a great variety of perceptions towards hygiene, nutrition cleanliness and social values of street foods when asked and reflecting upon food quality. But when buying street foods consumers often tend to give less attention to such concerns and instead choose with the money or time they have or the distance they have to walk to find food. Hence, many customers emphasise practical and functional reasons for purchasing and eating street foods more than anything else and a very pragmatic view on food quality therefore seem to be highly influential on customers purchasing patterns. The most frequent functional reasons given by consumers for eating street foods were:

Price is low

The price of street food ranges from 2.000 – 20.000 Cedis, cheapest for traditional Ghanaian dishes such as fufu, wakye, yam, and cassava. A filling meal of wakye and fish can cost as little as 2500 Cedis (0.25 USD) while meal of fried rice and chicken costs minimum 10.000-15.000 Cedis (app. 1.5 USD). The same meals would cost approximately 20.000-30.000 (2-3 USD) Cedis to buy in a restaurant and a little less to buy the materials on markets and cook at home. Consumers of street foods therefore save considerable amounts of money by eating in the streets, especially the traditional dishes, while rice meals are still too expensive for unskilled workers to buy every day - however still much cheaper than cooking a similar meal at home: *“Sometimes not all the food e.g. fried rice are cooked at home...It will cost more money. You can’t cook fried rice for 10.000 Cedis. But I can buy it for 10.000 Cedis”* and *“Sometimes, you may have little money on you, which is not enough to cook at home, let’s say 5.000 Cedis. So you can’t use it for that. So you have to use it to buy food outside”* (FGD, females). Together with the social gradient in the customer segment described under the social dimension, with customers ranging from middle class people to homeless beggars, this situation again underlines the importance of affordable street foods for the urban populations who are highly dependent on street foods.

Vendors also underlined the fact that customers rate cheap food of lower culinary quality above food with a lot of ingredients: *“Food has to have all the right ingredients but it is a problem that the customers don’t want to pay for this food. They want cheap food so I leave out some ingredients to*

make it cheaper” (vendor 1). This compels vendors to change the contents and lower the price of foods to be compatible and attract customers – which demonstrates functional quality as also overruling nutritional concerns.

It is timesaving and convenient

As described in the social dimension, many changes of life styles happen due to urbanisation and longer distances from homes to work places makes it impossible for many workers to travel to their homes to eat and vast numbers of workers therefore purchase street foods as their daily meals. Statements such as: *“I am working and don’t have time to cook for lunch so I take lunch outside every day”* (male customer, Adom 24th April) or *“because of the work, I can not go all the way home and eat, I have to eat now”* (female customer, Adom 22nd April) were therefore heard from almost every customer purchasing foods. Working hours are also often long for urban workers and many thus have no time or energy to cook once they got home in the evenings: *“We do not arrive home early. So in order to survive we have to buy food outside... And because you are alone and won’t need to cook a lot of food it is better that you buy it outside. Also if you are single, you can’t light up a stove to cook. It will disturb you. So you will prefer to buy food from outside”* (FGD, males). The proximity and easy accessibility to a good selection of dishes also added to the convenience of purchasing street foods instead of cooking at home – you can always find what you like to eat among the hundreds of food vendors in the streets.

It is not possible to cook food at home

As the last sentence in the above citation indicates young men prefer to eat food outside their homes because they live as bachelors, have no cooking skills and/or no kitchen facilities. Another male consumer explained: *“You know I am a male and I am not married and I do not stay with my mother. I have no time to cook and I am staying with a friend. We do not know how to cook”* (Male customer, Ayigya, 22nd April). This situation partly arises out of traditional family structures where men do not learn how to cook and where women cook for the households (see also social dimension). On the other hand it clearly shows how urban life with new family structures and housing facilities influences the nutritional patterns of urban populations.

Concluding remarks on functional dimension

This study has found that consumer’s base their purchasing choices mostly upon the described practical criteria in accordance with FAO results from street food studies around the world (FAO 1995). This finding is not highly surprising, since the concept of street food is based on servicing by-passing customers and enhancing easy availability to foods for the general population. However, the strength of this criterion is sometimes startling; *“It is not hygienic but we will have to take it like that – we have to eat”* (female customer, Asokwa 26th April) and *“Usually I will look out around the place before I buy. But if I am too hungry then I will just go and buy it”* (FGD, females) and *“I like the cheap food so I will buy it no matter what”* (FGD males). The functional dimension of food quality is

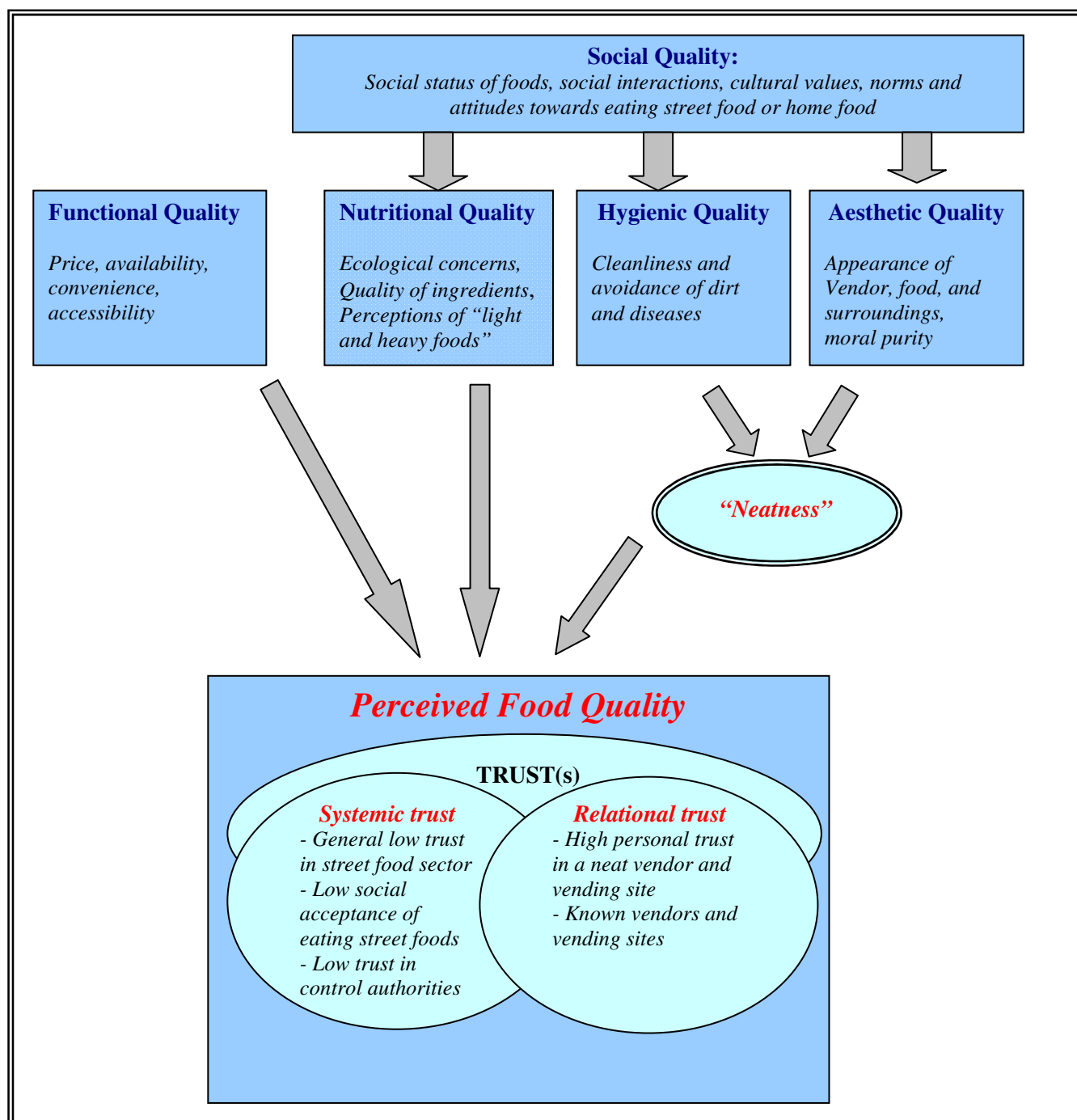
thus often overruling many of the described quality factors including safety, hygiene, aesthetic appearances and nutritional concerns.

3.7 Inter-dimensional analysis: the dynamics of food quality perceptions in this study

Each dimension from figure 4 has now been described in detail and it is clear that the five dimensions of perceived food quality all play substantial roles for vendors' and customers' perceptions of street food quality and to some degree for prioritising and choosing street foods. During the analysis it was also clear that many linkages exist between categories and it is therefore now possible to sketch out a new model to visualize such dynamics between the various dimensions of perceived food quality.

A new model for perceived food quality

In the new model (see figure 6) the five dimensions of food quality are no longer influencing perceived food quality equally. The social quality now constitutes an overall frame positioning the street food sector in a social context including the many social and cultural norms and values influencing customers' and vendors' interactions and behaviours. These have turned out to influence and relate to the dimensions of nutritional, hygienic and aesthetic food quality, which all have influence on perceived food quality. Findings also showed strong linkages between hygienic and aesthetics values which are therefore interconnected and feeding into perceived quality via the all inclusive criterion of 'neatness'. The reason why functional quality is now placed outside the influence of social quality perceptions may seem artificial – since every action we take can be seen as inscribed in a social context. However, findings revealed that functional criteria were often purely strategic or practical factors and often overruling other considerations expressed towards food quality and hence quite independent of other factors identified.

Figure 6: Inter-related dimensions of perceived food quality and components of trust**Relational and systemic trust**

The total perceived quality of street foods is now made up of a wide range of choices, preferences, attitudes, and perceptions which seem to influence, create or decrease trust in the food. Two dimensions of such trust in food were sketched out by Hansen et al. (2003) who described *relational trust* as a personalised trust based on interactions and experiences with individuals and the opposite type of trust as *systemic trust* - trust in abilities of food producers, control authorities, government institutions etc.

In this study social interactions between the individual customer and vendor and a personal social relationship between them have indeed turned out to be of great importance for the perceived food quality of vendors and customers; the analysis of the social dimension revealed that a eating from a known and trusted vendor and being a regular customer induces strong trust in the quality of the food and also gives the customer an experience of social belonging when eating. The analysis of hygienic and aesthetic dimensions also revealed that such trust is created when a customer evaluates and accepts a vendor who can present clean and aesthetic food, persons and vending environments. Hence, trends of personalized trust in food are strong and evident among vendors and customers in Kumasi.

To counter this were several signs of low *systemic* trust in the street food sector; an overall low social acceptance of the street food sector, the social apprehension towards eating street foods and the low trust in control authorities' abilities to give advice and control the sector and consumers lack of possibilities to influence the hygiene standards and behaviours of vendors. (see more in ch. 4) are some examples. Finally, the street food sector lacks organisation and structure; few vendors are members of official associations, no official quality standards for street food quality exist and no strong consumer associations to strengthen awareness of consumer's rights and their influential powers are found.

The strong personal trust might therefore be part of a natural coping strategy for customers to ensure food quality: with no state guarantees and no trustworthy official system consumers are compelled to put their trust in persons instead and relying on known vendors, establishing social relationships and making highly individual quality assessments are therefore preferred ways for consumers to cope with uncertainty and minimize risks.

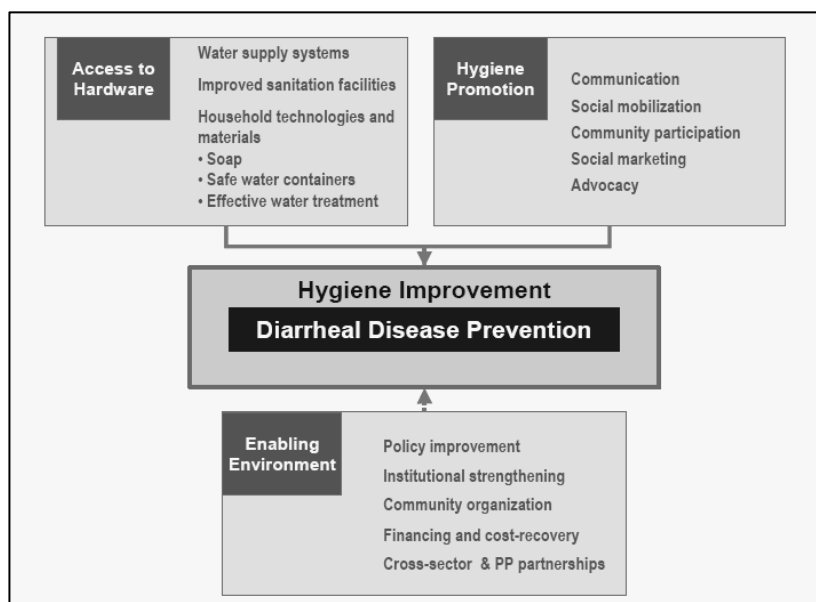
Chapter 4: Public Health Perspectives

The analysis has highlighted vendors and customers' practices and perceptions of several important aspects of food quality and some of them are obviously related with potential risks of bad food hygiene and safety. The last part of this thesis will therefore focus on how practices and perceptions can be targeted and food safety eventually be improved through future hygiene promotion strategies in the street food sector.

A strategy for food hygiene promotion

From a public health perspective the main reasons and benefits of improving hygiene are the obvious health improvements. Strategies of enhancing hygiene and reducing diseases are many and several comprehensive reviews of hygiene projects have highlighted the importance of addressing several factors when for example reducing diarrhoeal diseases (Esrey et al. 1991, Fewtrell et al. 2005). The Hygiene Improvement Framework (HPF) for preventing diarrhoeal diseases has therefore been developed by the Environmental Health Project (EHP) (see figure 7) to take into account a list of important factors.

The three areas of hardware, hygiene promotion and enabling environments are all relevant issues for interventions in the street food sector and a beneficial strategy for implementing food hygiene initiatives is thus to assess these and at best design a cross-sectorial initiative targeting more of these simultaneously. In this chapter some factors in the framework will thus be briefly addressed to give suggestions for such future projects.



Source: EHP 2004

Figure 7: The Hygiene Improvement Framework

4.1 Hardware: Access to adequate water resources

No vendors in this study had potable water available at the vending stand but brought water from nearby public taps. The majority of vendors identified this as an obstacle to ensure safe washing and cleaning practices because of rationing of water consumption during cooking and cleaning. Findings from large-scale street food projects in Bangkok, Calcutta and Accra (Dawson et al. 1996, Chakravarty et al. 1996, NRI org) have found similar worrying results of limited access to water for vendors. Some reviews have shown that quantity of water has greater importance in reducing the prevalence and severity of various water related diseases, including diarrhoea, than the actual water quality (Esrey et al. 1991). It has therefore been hypothesized that hand washing and other personal hygiene practices become more frequent when water is freely available at close range - which was also the promising result from the Bangkok street food project (Dawson et al. 1996). Such results points to the importance of providing high coverage of affordable and steady water supplies in areas of Kumasi with many food vendors. One strategy is to design restricted vending areas with proper water and sanitation facilities which has been tried out in a huge vendor resettling project in Singapore. Unfortunately it resulted in many vendors not being able to afford a stand in the new designated area (Dawson 1991). In Kumasi I believe it is possible to make measurable improvements on a smaller scale; it is relatively easy to identify small areas plastered with outdoor kitchens, no water or sanitation facilities. These can be greatly improved by levelling grounds with concrete and constructing water taps and drainage and need not become too expensive for vendors to cook in for this reason.

4.2 Hygiene promotion: Communicating important food safety and risk messages

Vendors' risk awareness

An important criterion for effective hygiene promotion is to target a condition which is of importance for the target groups to change and improve on (Appleton 2003). This might turn out to be the biggest obstacle for future hygiene promotion within the street food sector. This study indicated that vendors do not seem to acknowledge the importance of hygiene education and knowledge. Instead all vendors stressed practical cooking skills as the most important knowledge (i.e. learning how to cook traditional dishes, knowing the prices and differences of ingredients). Only one vendor mentioned hygiene and food safety as an important part of the mandatory courses of cooking in Junior Secondary school¹¹ and no one mentioned hygiene as an important part of later formal or informal cooking training. Prioritising practical skills over hygiene knowledge thus constitutes a first barrier to reach vendors with hygiene messages in the street food sector. A second major condition for hygiene promotion to be effective among street food vendors might be the lack of a visible and measurable

¹¹ In Ghana, classes in "catering" are mandatory in Junior Secondary School, and students are taught basic food preparations such as traditional dishes and food hygiene.

effect of behaviour changes (Appleton 2003). Washing hands will probably not bring more customers and no vendor will know if hand washing will lower the incidence of diarrhoeal diseases in the population. Hence, benefits from behaviour changes and the related efforts to introduce these will be evaluated by vendors and maybe overruled by routines, time constraints and other daily concerns with a visible impact on income.

Most important risk practices to address

As stressed in this thesis vendors and consumers host a lot of risk perceptions and future hygiene promotion could therefore beneficially start by addressing vendors' own perceptions of harmful sources of dirt and related practices. Vendors predominantly perceive harmful 'dirt' as coming from the outside surroundings and related messages of avoiding such dirt (dirt from drainage, gutters, garbage and flies) have already been heavily addressed in a variety of forums such as the vendor network MAFFAG, and Environmental Health Departments. It was also the major focus of the Accra street food project which promoted aesthetic cooking and vending environments and beautiful vendors (see pictures). Awareness of avoiding dirt from environments and presenting aesthetic and spotless vending sites is therefore already deeply engraved in authorities', vendors' and customers' awareness.



Campaign material from The Accra Street food Project 2003 to promote consumer awareness of food safety (Source: NRI org)

In comparison awareness of evident risk practices of vendors and invisible features of dirt are surprisingly low among vendors and consumers. Even though this study have shown that aesthetically founded efforts are in fact beneficial for many aspects of improving hygiene, focusing entirely on visible features in the vending environment might risk being counterproductive for food hygiene by creative a common understanding that “nothing else needs to be done”. It is therefore crucial in future campaigns to address ‘inside’ sources of contamination, including the possibility of vendors contaminating the food them selves. In particular vendors’ understandings of ‘germs’ and ‘animals’ should be targeted since these do not directly translate into bio-medical understandings of pathogens and thus constitutes some danger to food safety. Convincing ways of communicating to the vendors that things might carry health risks equally dangerous to gutters i.e. even though not

visible (such as invisible particles of stool or soil on hands and vegetables) should therefore be developed¹².

On the basis of this and the study of Olsen (2005) I therefore recommend to address few crucial risk practices in future vendor campaigns:

- ***Promote clean kitchens during cooking (especially important for outdoor kitchens)***
- ***Promote hand washing with soap***
- ***Avoid cross-contamination of food (incl. separation of raw and cooked foods)***
- ***Promote good cleaning methods of vegetables (especially those consumed raw)***

Hygiene promotion is more likely to succeed if focus is on key-risk practices which are realistic to alter (Appleton 2003). All the above practices are easily changeable in the sense that they do not require large scale financial investments of vendors or authorities. However, analysis showed that many practices are quite interlinked with complex perceptions of dirt and routine practices and effective hygiene promotion activities must therefore take into account and try to understand the underlying rationales of vendors and customers to succeed.

Levels and channels of food safety knowledge

It turned out that most vendors have strong apprehensions towards certain sources of information and therefore have very few channels of hygiene information available. Only two vendors in this study (no. 2 and 3) had attended formal cooking courses including food safety issues and both had overall better food safety knowledge than the rest. The rest had not obtained any formal training in food safety apart from the school courses. The level of food safety knowledge was particular low with the two traditional vendors (no. 7 and 8) who both had short schooling and cooking was entirely learned through informal channels not guaranteeing them adequate food safety knowledge. Only one vendor remembered to be taught hygiene and food safety in school and the formally educated vendors did not perceive hygiene to be a major part of their cooking training. Instead all vendors stressed *close social relations* as the most important source of gaining vending and hygiene information. Most of them referred to mothers, other family members or ‘master’ vendors as the most preferred source of such information.

Hygiene and food safety promotion via vendor-vendor interactions

A reason why vendors prefer seeking advice with close relationships may be explained by another finding: Vendors do not approach each other for information and the majority of vendors stated that it is not perceived socially accepted to seek information and new knowledge on food safety from fellow vendors. Such behaviours are perceived as “spying on business” and inappropriate: “*If you go and*

¹² National hand washing campaigns were launched in Ghanaian rural areas and district towns in the mass media some years ago (World Bank). School initiatives, social marketing of soap, bill boards, TV- and radio spots showing housemothers contaminating home cooked foods via dirty hands were launched. The slogan used was “There is *something* on your hands” referring to bacteria depicted with pink spots spreading in the food and on to those eating the food. This turned out to be extremely effective in raising awareness about “invisible” harmful dirt.

look at other people to see how they are cooking maybe they will think that you are a witch or think you will steal their customers” (vendor 8) and “When we go there to ask them they will scold you and say “your brother teaches you every day so why don’t you ask your brother?” So I am not supposed to go around asking others” (vendor 4). As described in ch. 3.1.1 many social rules seem to dictate what is of ‘appropriate behaviours’ for social interaction and such social codex also seem to influence vendors’ knowledge seeking behaviour. Vendors are in danger of losing social acceptance among fellow vendors if exposing their own lack of knowledge by seeking information. And such business culture clearly constitutes a strong barrier for vendors to gain new knowledge and improve on food safety.

Hygiene and food safety promotion via vendor-customers interactions

All customers agreed that making vendors aware of insufficient cooking hygiene is necessary to enhance street food quality. However, only very few had the courage to approach vendors since they are known to treat demanding customers badly by “*insulting*” them, “*calling them names*”, “*shouting*” at them, give them bad food or demand more money. One customer explained: “*In fact you can’t tell the owner if that the place is not neat. You will feel shy to go and stand in her face to tell her that. She will insult you in front of a lot of people*” (FGD, females). All vendors confirmed that very few customers ask questions, comment or advice on cooking environment, hygienic food quality etc. Customers were also very concerned not to ruin the business of vendors by speaking out complaints in public and seemed to protect vendors - sometimes even though highly dissatisfied with services or food quality! Instead rumours of good and bad street food experiences travel between consumers via word of mouth. These findings once again depict customers and vendors as playing their respectful roles towards each other. But a social attachment to a vendor indeed also seems to produce a protective attitude in customers who do not wish to let vendors down.

Together these findings illustrate a tabooing culture towards seeking knowledge among vendors and a very weak consumer culture with consumers who do not seek influence, educate vendors or enforce demands of food safety and hygiene. Vendors’ hygiene practices and perceptions are therefore influenced and challenged from very few sources.

Important vendor target groups in hygiene promotion

Traditional vendors

This study clearly showed that the potential risks of cooking in unsafe environments are considerably higher for traditional vendors than for fast food vendors. The present organisational set-up of the street food sector makes it further difficult for these vendors to change behaviours; Associations for traditional caterers do not host street vendors as members and fast food organisations do not host members cooking only traditional dishes. Finally, this group of vendors seems to have none or very low schooling and cooking education levels. Targeting these vendors with hygiene promotional initiatives is therefore very important and including traditional vendors in formal networks would greatly enhance their possibilities to obtain food safety knowledge and to change behaviours.

Support staff:

Many vendors in Kumasi have support staffs employed in charge of parts or majorities of food preparations and serving. Support staff is a vast target group and sensitizing this group to food hygiene would have an immense potential impact on the general food hygiene of the street food sector. In this study no support staffs had formal food hygiene knowledge and many had not attended junior secondary school. This constitutes a serious problem since a huge group of support staffs perform delicate food preparations on a daily basis. The problem was acknowledged and discussed by MAFFAG members during the knowledge sharing session. They know that support staffs have insufficient low levels of food safety knowledge and practice unsafe behaviour which made many vendors feel frustrated. The majority of vendors also acknowledged a responsibility to educate staffs. However, observations showed that vendors rarely enforce food hygiene practices towards their staffs or gave lectures on food hygiene and safety. Finally, support staffs never attend meetings or workshops in vendor associations.

It is my clear impression that vendors are very protective towards their status as owners or managing vendors and do not wish to loose status by educating lower ranging staffs. Vendors expressed somewhat condescending attitudes towards illiterate staffs and do not perceived them capable of understanding and internalizing food safety messages. This problem should be addressed in future education strategies by encouraging vendors to involve trusted support staff when attending meetings and workshops and educational materials for illiterates should be available. Finally, above identified channels of knowledge indicated that ‘master’ vendors is a common source of knowledge and *Tutor-Vendor programmes* could therefore be a strategic way of ensuring education of staffs. Master vendors should be taught leadership skills and be made aware of the responsibility towards teaching staffs and enforcing safe food practices on their premises.

4.3 Creating enabling environments: future forums for hygiene promotion

Studies of the street food sector in Ghana has pointed out that the sector is now too big for authorities to control (Maxwell 2000) and new control mechanisms and hygiene promotion methods are therefore needed. The Hygiene Improvement Framework suggests community involvement, partnerships between authorities and private organisations and institutional strengthening as essential components of creating enabling environments for hygiene promotion. In Kumasi the contact between vendors and KMA does not emphasise social inclusion or participation of the public and it relies mostly on one-way communication from authorities. Hence, if municipal authorities in future wish to appeal to vendors it requires a different approach - one that emphasizes participation and collaboration rather than control.

Participatory communication strategies

The workshop with MAFFAG members is an example of a participatory approach useful for involving vendors in promoting food hygiene. The method included participatory role plays in which vendors could influence events (see pictures) and open ended discussion questions which stressed

two-way communication between researchers and vendors. Materials for the workshop consisted of a trainers guide containing picture examples and various accessories for role plays. This made the event possible for illiterates to participate in and for untrained facilitators to conduct. The aim was to involve vendors in discussing the various barriers they encounter in their everyday vending life and the method proved effective to reveal difficulties in ‘doing the right thing’ even though vendors knew of the importance to keep kitchens clean, wash hands and educate support staffs in food hygiene.



Role play about hand washing



Discussing hand hygiene with members of the MAFFAG network



Role play about sweeping and contaminating food

KMA and the role of other authorities

A general finding from street food projects in many countries are authorities' habit of not recognizing the food sector or merely tolerating it until vendors become a nuisance (Dawson 1991). In Ghana the street food sector has luckily gained a lot of attention during the last ten years with the Accra Nutrition study pointing out the significance of the sector (Maxwell 2000) and the Accra Street food project evaluating the hygienic standards of street foods and educating many vendors (NRI org).

In Kumasi the street food sector is in fact also a high priority of municipal authorities who are well aware of the scope of the sector. And being the authority with daily ground level contact with vendors, KMA has a key-role to play in hygiene promotion and a great potential for positively influencing vendors hygiene perceptions and behaviours. But obvious problems exist; inspectors are in general rather disillusioned and hence do not see the beneficial aspects of the sector but primarily view street foods as a source of food contamination and a public health threat. This was also one critic outspoken in the Accra study (Maxwell 2000). Furthermore, KMA have until now only been inspecting, controlling and disciplining vendors and few vendors stated that they can gain useful advice and hygiene knowledge from such control visits by KMA – they mostly experience being reprimanded.

But there are several obvious possibilities for KMA to influence vendors' behaviours with existing tools. Present KMA inspections focus heavily on controlling health certificates and clean environments and basic hygiene practices such as hand washing and washing vegetables are not

systematically studied¹³. Active promotion of personal hygiene and hygiene practices could easily be included in the routine work tasks of environmental health staff inspection rounds e.g. by asking about or inspecting vendors' toilet facilities and advising about soap and hand washing and how to avoid contaminating food via dirty hands.

Another possibility for KMA to use their influence is in active cooperation with vendors' networks and private food cooperation.

Networks for vendors

This thesis has highlighted that vendors prefer seeking knowledge from trusted social relations whom they already trust and have legitimate contacts with. Food hygiene promotion could therefore beneficially be conveyed by strengthening vendors own institutions such as vendors' networks. According to Maxwell, strengthening such associations also helps in developing self-regulatory mechanisms and gives a political voice to small-scale entrepreneurs (Maxwell 2000) which will therefore be an alternative hygiene control strategy to the present restrictive one upheld solely by town authorities.

The MAFFAG association in Kumasi has proven successful in establishing an accepted culture of vendor-to-vendor education via workshops, lectures and informal exchange of experiences and in the street vendor education program in Accra conducted in 2000-2004 (NRI org) 300 attached vendors were trained via such networks. The networks have succeeded in training approximately 3000 vendors in basic food hygiene. Even though the street food sector is a highly unstable and informal sector this project and the single vendor association in Kumasi have clearly proved that it is possible to reach vendors, organize them in sustainable networks and initiate large scale educational programmes collaborating with vendors rather than controlling them.

Furthermore, KMA staff confirmed that in general members of MAFFAG have better possibilities of social support and positive influence from fellow vendors and from MAFFAG meetings it was clear that being a member of an association give vendors pride in their occupation. Finally, joining a 'social club' is already a strong integrated feature of the Ghanaian culture¹⁴ which usually functions as forums of exchanging experiences within a specific worker group. Being in an official network can therefore help combat the overall low social status of street food vendors, curb the tabooing culture towards seeking new knowledge and enable a positive environment towards educating each other. This will give vendors a much stronger incitements to improve on food hygiene.

So far the only organisation involved in establishing networks in Kumasi is the food cooperation Nestlé, the producer of Maggi, who has included thousands of vendors in business networks in the

¹³ The inspection format used for vendor control visits, do not contain any indicators related to personal hygiene or hygiene practices of vendors.

¹⁴ Social clubs often have emphasis on providing members with financial security by donating to a common fund. Money is spend on funerals, medication and covering living expenditures during periods of unemployment

Ashanti region alone. Nestlé naturally operates foremost from a commercial point of interest but the company has nevertheless proven to be effective in establish wide-ranging communication with vendors, which can be brought actively into play in future public health campaigns.

Nestlé has already financed several clean up campaigns promoting ‘The clean market place’ (see picture) in Kumasi and other towns but until now the activities in the networks have not focused heavily on food hygiene; The corporation does not operate with written food safety standards¹⁵ for attached vendors and food hygiene is not a part of the quality assurance visits they undertake at vendors selling their products. Therefore, building positive partnerships and creating dialogue with food cooperation’s on enhancing the focus on hygienic aspects should be stressed in the future.



Quality assurance: Smiley’s and membership certificates

At the moment the only quality assurance tool existing for street food vendors is the health screening license, which is rarely visible to customers. It could be a logical next step to implement for example a *KMA-smiley* or a *network-smiley* clearly signalling a successful inspection by KMA or a standard acceptable for a membership of a vendor network. This would provide the customers with the first visible objective tool to assess food hygiene and safety. Furthermore, it can strengthen the vendors’ awareness of inspections as being a positive event and give them pride in keeping up hygienic standards.

Concluding remarks on future hygiene promotion in the street food sector

The significance of the street food sector in developing countries has been highlighted and recognized by many big donor organisations during the last decade. Several educational projects have been initiated for vendors in Bangkok, Accra, Singapore and Calcutta but scaling up activities to regional or national levels and sustaining educational projects have not found place. Furthermore, projects have rarely been based on analysis of local hygiene perceptions. It is therefore becoming increasingly necessary to direct funds to more vendor targeted hygiene promotion activities. Based on the findings and the hygiene improvement framework this chapter has highlighted some possibilities of such future activities. Strengthening vendors’ networks in fruitful partnerships with commercial companies already hosting professional contacts to thousands of vendors in particular seems like a promising strategy.

¹⁵ Confirmed by telephone interview with staff in charge of vendors’ networks from Nestlé Head quarter in Accra.

Chapter 5: Discussion

5.1 Discussion of research approach

Quality of translation and interview data

The attached translator had had some training by professional research staff in translation and transcription processes and had previously been working with researchers conducting similar fieldwork. However, translation and transcription bias were probably still present in some degree. Back-translation of transcribed interviews and FGD's by a second translator could have added to the correctness and quality of data but was not performed out of practical reasons. To limit translation biases each interview guide was presented to the translator on before hand. The translator would then rehearse phrasings, suggest alternative wordings and point out inappropriate or complicated questions. Furthermore, each transcription completed by the translator was followed up by question sessions with me in which wording and correctness of the translation was discussed. Interviews conducted and transcribed in English by me were usually double checked by the translator. Transcription of interviews by a second translator not involved in the interview situation might also have added to the objectivity and correctness of the transcription. However, the low quality of recordings, with a lot of street noise, sometimes made it quite impossible for others to understand the contents and notes from the interviews were often necessary to complete the transcriptions. Finally, it was not financially possible to hire a second translator.

Selection of vendors and customers

This study was limited to vendors serving whole meals from street based stands. These and similar vendors can be considered 'middle class' vendors, since they have established kitchens but are not considered proper restaurants. Food hygiene and food safety is most likely lower with 'low class' vendors who are known to cook under very provisional conditions. To get a complete picture of hygiene and safety of street foods in an urban setting such as Kumasi and prioritise hygiene intervention groups and settings it is most certainly relevant to observe and evaluate these settings as well.

The majority of customers included in interviews and FGD's were youngsters or young adults of middle or low income class who ate street foods on a regular basis. I only met and interviewed few customers of high income or people who were non-customers. This selection provides information from the typical street food customer segment in full accordance with other street food studies (Tinker 1997, Maxwell 2000, Mwangi 2002). However, it is relevant to consult high social-class people and non-customers if one wishes to gain a complete picture of perceptions towards street food and reasons for not eating it. This will reveal if it is hygiene knowledge, social status or other factors such as higher income or better housing facilities that keeps them away from buying street foods.

What can be observed?

Observations are always influenced by the researchers' own agenda and ability to understand the setting. They are "*subjective, because what we see (or do not see) is influenced by our own culture and experience*" (Rifkin 2001:44). Some of the observed behaviour patterns might therefore not be directly interpretable and others might be misinterpreted since the researcher does not understand the setting and underlying cultural reasoning. Me, being a white, western and none-Twi speaking person, possibly sets limits to what I can observe and understand in the street food sector in Kumasi. To avoid biased observations and interpretations, it is vital for the observer to "*recognise both how much and how little they observe*" (Wolcott 1994:170). I therefore continuously aimed to discuss observations with the attached local translator and other researchers doing observations in Kumasi. Such sessions with the translator were often interesting for other reasons as well; when I was puzzled with practices and statements she was often amused and found them natural and logical. The construct of 'neatness' is an example. To begin with the translator found the meaning of the commonly used phrase 'neatness' quite apparent and simple. As I realized that neatness covers a range of criteria for vendors and customer, I thoroughly instructed the translator to probe for further explanations from respondents. This shows that being an outsider can also have positive effects on observations since the contrast in cultural settings make behaviours and explanations "*stand out in bold relief*" (Wolcott 1994:170) and at times therefore makes it easier for strangers to identify important practices and perceptions.

Challenges of doing observations and taking field notes in a street food stand

Overall, vendors seemed to be little worried about being observed by me and note taking during field work was in general perceived as interesting rather than monitoring. However, several challenges on how to do observations in a respectful and effective way were encountered. In field notes from the first days I wrote: "*I have now seen that the vendor stands are very small and that every centimetre of space is needed for different stages of the cooking process. So how can I fit in? Me sitting on a chair inside the stand mean that vendors have to bend them selves around me and maybe reorganize their daily routines? How can I then avoid disturbing their work and changing their behaviours?*" Hence, when initiating observations it took time to position one self optimally. The dilemma was how to get close enough without disturbing the vendor and how far away one can sit without missing out on important behaviours or giving the vendors opportunities to 'hide' parts of the food procedures. However, all vendors continuously asked me to come closer to follow the work meticulously to provide me with comprehensive knowledge of all vending activities.

Similarly, it was a concern how and when to take notes during fieldwork with vendors. Taking out a notebook during work sessions could intimidate vendors and in general I therefore prioritised to take part in work routines rather than taking notes. Instead pictures were taken to reconstruct events and sometimes I made an 'escape' to nearby chop bars to sit down and do scratch notes for 5 minutes before returning to the vending site. Notes were always elaborated later same day. However, as vendors became accustomed to me they started to explicitly ask me to note down. It was important for

them that I got ‘the right’ information directly from them and seeing me noting it down often gave them a feeling of authority and significance to the study. During informal interviews full notes were always taken on the spot.

Observations at night-time

It was the aim to observe all phases of the vending during all times of the day. However, it was not possible to stay at vendors after 10 pm. since it was considered unsafe for foreigners to walk the streets in the late evenings and since transport was scarce. Information on evening and night events were therefore obtained from interviews and talks with vendors during day hours.

Observations in households

The study has made apparent that customers perceive home made food safer and more attractive than street foods. They also perceive home made food as holding social and nutritional values better than those of street foods. Therefore it is quite interesting to find out more about urban home based food hygiene practices by conducting further observations in household kitchens. This would not only make visible to what extend the urban population have possibilities to conduct safe food hygiene at home. It would also add to the understanding of people’s demeaning perceptions towards street foods.

Validity of findings

Triangulation of data collection methods was used to assure validity of research results. Each method (focus group discussions, interviews and participant observations) has added to the complexity of the data material and compensated for shortcomings of other methods. Problems of validity arise if data does not accurately reveal the actual behaviours and perceptions of people and this might in particular become relevant if the subject of investigation is socially sensitive. In such situations respondents may give answers in accordance to what they find suitable or what they think is expected of them in stead of expressing their genuine beliefs. For example, it was clear that street food is in the limelight of control authorities in Kumasi because of recent outbreaks of cholera. Some vendors were therefore prone to report exaggerated concerns with food hygiene during initial contacts. Findings also made it clear that hygiene is a strong social virtue related to appearing clean and being a moral person. Hence, answers of hygiene practices might be skewed towards over reporting ‘correct’ practices. Finally, observed staff might ‘hide’ or alter behaviours they perceive as not presentable to the observer.

To avoid such bias’ series of observation sessions at vendors were conducted supplemented by several interviews. Continuous observation and informal conversations made it clear that some statements of concerns were neither persistent nor turned into practices and biased practices were quickly revealed. Furthermore, ending each sequence of observations with a formal interview had the effect that respondents knew what I had observed and could no longer over-report ‘good’ behaviours without me recognising biased answers immediately. Finally, when introducing the objectives of the

study to respondents, words such as “food safety”, “hygiene” and “food contamination were consciously avoided to minimize the risk of influencing their practices and leading their answers.

Taking the time to discuss findings with respondents and giving emphasis to their feed-back is also an important way of validating findings. I was the fourth student doing field work in the street food sector for the CP51 programme and much data has been compiled. The knowledge sharing workshop with vendors in the last phase of the field work helped test some of the vendor related findings and research hypothesis. Vendors were hence presented with findings on lack of hand washing practices, the focus on keeping aesthetic vending premises and ignoring kitchen premises. Finally, barriers to and future possibilities of educating vendors and staff were discussed in open forum. Vendors were in general in agreement and acknowledged the findings as they appear in this thesis and were willing and eager to discuss possibilities of further educational activities. Their suggestions have been incorporated in the recommendations as they appear in ch.4.

5.2 Discussion of findings

New approach in street food studies

This study has opted away from the tradition of many street food based studies focusing on microbiological food quality and hygiene and instead explored the issue of hygiene and street food safety using qualitative anthropological methods, emphasising contextual and emic aspects of food safety, hygiene and contamination. The study has identified and described several dimensions of perceived food quality among street food vendors and consumers and the analysis revealed a complex system of interacting social, cultural, practical and normative factors. Findings thereby confirm that perceived food quality indeed diverts from objective microbiological food quality and in accordance with findings of Holm (1996) consumers depend heavily on individual and situational assessments of food when making choices.

In this study consumers particularly based their purchasing choices on functional factors such as accessibility, price, and convenience, as it was also stressed by FAO (FAO 1997). But a strong emphasis on *neatness*, a construct created in dialogue between hygienic and aesthetic concerns was also identified. *Trust* created through social and personal relationships to known vendors was also determining for customers perceptions of the food quality and choices. Hence, neatness and trust seem to be ruling criteria for evaluating street food quality. This clearly demonstrates that reasons for valuing hygienic foods are not solely controlled by health concerns and preventing diseases but are complex social and cultural construct as well. In this as well as many other studies of food perceptions (i.e. Frewer 1996, Knox 2000, Hansen 2003, Redmond 2004) it is therefore reasonable to conclude that *risk awareness* of health and disease is not the core dimension when assessing food quality at all.

How do people prioritise hygiene?

So why do people not rate food hygiene and the risk of disease as the overall food quality criterion? In accordance with Holm (1996) and Knox (2000) this study suggests that concerns of food safety and

related food risks are integrated in everyday concepts of food quality and that choices of foods often reflect compromises in everyday life rather than reflecting the consumers' rational preferences - for example when rating price over hygiene. Hence, food safety and hygiene is not merely overruled as a quality criterion but spun into the hundreds of other concerns people deal with in their lives everyday. During the study this became increasingly clear since hygiene practices turned out to be particularly determined by social behaviours and everyday interactions between vendors and customers and also highly formed by social and moral values and norms.

By using the theory of Goffman and Douglas such behaviours could be better understood; it was evident that hygiene related behaviours are indeed created during 'the everyday show' in natural social interactions between vendors and consumers. And everyday logics of vendors and customers turned out to be concentrated on and deeply socially and morally determined by keeping up appearances, avoiding social contamination and thereby making a good impression. 'Neatness' in performances and appearances can therefore be interpreted as profound positive virtues which seem to be the main driving forces for most hygiene related practices. One might say that 'Neatness' replaces and becomes the everyday proxy for hygiene concerns, which is indeed a very logical and human behaviour pattern: usually people do not "think" hygiene in every aspect of their everyday routines. Instead it is inscribed in our behaviours as general efforts to keep clean, neat and presentable.

Customers' behaviours are therefore also meaningful: assessing food hygiene by evaluating neatness is a possible – and maybe the only - method for lay people to estimate the hygiene. Apart from being a practical tool for hygiene assessment, *neatness* is also likely a fairly good indicator of objective hygiene; A neat vendor is also a vendor who takes the time and efforts to actually become neat by cleaning him/herself, utensils, the food stand etc. and the hygiene of an un-neat vendor and food stand is very likely to be worse. The health danger arises if neatness becomes nothing more than an aesthetic façade which conceals bad hygiene – which was one identified aspect when vendors cooked under very unhygienic standards but presented food very neatly when vending. However, most often it was possible to identify hygienic as well as aesthetic efforts to ensure neatness.

Aesthetics

No other studies of street foods have identified and described aesthetics as a core factor for evaluating the quality of street foods. FAO evaluations stated that: "*Discriminating consumers look for general cleanliness of street food vendors*" (FAO 1997) but aesthetics was not singled out as an explanatory factor for such consumer behaviours. Neither have studies of food risk perceptions given aesthetics much attention. The reason for not focusing on this aspect might be that aesthetics are obviously part of very subtle and elusive constructs such as *neatness*, which demands qualitative in-depth analysis to pin-down. However, the importance of aesthetics has been described and acknowledged in studies by Douglas (2002), Curtis (2001b) and Van Der Geest (1998) who all identified aesthetics to be a universal and major driving force for hygiene practices and assessments. This study confirms that the

importance of aesthetics also applies to the world of street foods and is a major driving force for presenting, evaluating and choosing hygienic vending environments.

Trust in personal relationships

The theory of Goffman can explain how concerns of hygiene are replaced by concerns of neatness and formed by social interaction patterns between people. But it does not take into consideration the social bonds and personalized trust in known vendors which was indeed found to replace hygienic food quality concerns in this study. Such trends of high personal trust were also found among vendors and consumers in Uganda (Bhat 2000). In food related studies by Hansen (2003) trust was found to be a coping strategy for consumers' lack of knowledge about food risks. However, in this study trust in vendors was mostly based in a personal and social relationship and in fact not much related to customers believing in vendors' knowledge of food safety. Hence, a personal factor also exist which can not be explained by Goffman's' social theory or theories of coping for uncertainty. My own best explanation for these mechanisms is vague and based on the cultural context. It is obvious that the society and culture of Ghana and the Ashanti region in particular is built on strong values of honour, moral and pride¹⁶. Several codex' of proper social behaviours and traditions in relation to greetings, respectful behaviours towards elders, chiefs etc. (see for example Kwadwo 2002) are therefore being strongly practiced in today's Kumasi. Hence, to show respect and to give a known person your sincere trust is an expectable behaviour and turning away, doubting or questioning a trusted person is considered highly in-proper, in-moral and a demeaning behaviour. This might also explain to some extend why there is presently no culture for critical consumer-organisations in Ghana.

The findings of Henseler (2005) presented earlier (see figure 2) may seem contradictory when finding that a personal relationship to a vendor was only the criterion for 8% of customers when buying lettuce. Results suggested that cleanliness was a much stronger criterion. Two explanations are relevant for this finding: The special need for treating lettuce to avoid food contamination has been heavily promoted and is by now public knowledge for both vendors and consumers. Answers might reflect this awareness since the survey only addressed reasons for choosing lettuce. Furthermore, survey results are possibly biased towards 'correct' answers such as being attentive towards food hygiene and cleanliness while answers obtained in this study during observations and informal conversations have revealed much more complex perceptions and motivations for behaviours.

Potential explanatory socio-demographic factors: Gender, Income and education

It has been hypothesised that female vendors are more concerned with food hygiene since they are used to handle food in their homes. In Kumasi it seems that more men are now going into the street food business as fast food vendors. But Ghanaian men typically have no or little cooking knowledge and it is therefore interesting if they practice less safe food handling compared to female vendors. There were no obvious association between gender of vendors and safe food practices in this study

¹⁶ The Ashanti region has been and is today still one of the most powerful Kingdoms in Ghana with some of the most influential chieftaincies attached to it. Hence, people from the Ashanti region have very high awareness of this powerful status and are very proud of their cultural heritage.

and neither did higher formal levels of vendor education seem to be turned into safer food behaviours. Findings were similar among street food vendors in Nairobi, where Mwangi (2002) stated that it is not the sex of vendors or vendors' knowledge about health and hygiene which hinders them in applying safe food practices. Mwangi therefore states that the wider social, cultural and everyday context seemed to have great influence on vendors' behaviours.

One social factor with potential influence on vendors' hygiene behaviours might be the status of the customer segment. In this study vendors were selected from high-income as well as low-income areas. Vendors' hygiene practices could be expected to reflect such placements taking into account that higher educated and higher income customers might be more aware of food safety and hygiene. To my own surprise hygienic standards were not better at vendors in high income areas (city centre) or areas with many highly educated customers (near the university campus) compared to lower income areas. Instead efforts to present neat front stages in areas with high status customers were sometimes higher since vendors were aware of customers' being more knowledgeable about food safety.

Quality perceptions and awareness of food safety did not differ across gender of customers while education levels seem to have some influence. Hence, many university students and higher income customers were aware of low food safety standards in street food and often expressed more critical and demeaning perceptions towards street food. However, students are a major customer group and they do not seem to abstain from purchasing foods despite their apparent higher knowledge on food safety. When purchasing foods they expressed and used exactly the same criteria as everybody else – they assess neatness before everything else.

Together, these findings demonstrate that social and cultural values of neatness offer good explanations for vendors' safety behaviours and customers' priorities. This once again stresses the importance of not restricting promotion strategies to educating vendors on risk behaviours, but to be aware of the multiple driving forces of hygiene behaviours highlighted here. It also underlines the importance of strengthening customers' demands towards improving food safety, which is obviously not done just by educating people on food related risks since most people still withdraw from using their consumer-influence.

Implications on hygiene promotion

The implications of these findings for future hygiene promotion are several and some were mentioned in chapter. 4. It is obvious that educating vendors on risk factors is not a sufficient strategy and social and moral driving forces, such as neatness and aesthetics, of hygiene must thus be included and targeted. Furthermore, the fact that hygiene behaviours are so profoundly tied to social interactions, social and trusted relationships makes the 'network strategy' an obvious choice. Actively involving vendors in hygiene promotion within networks takes departure in vendors own

trusted relations and recognized forums and thereby enhance motivating environments for vendors to gain knowledge and change behaviours.

However, the lack of acknowledgement of food related health problems might be a serious obstacle for the effectiveness of interventions and a survey study of street food related diseases among customer could help clarify and make visible the magnitude and nature of the problem (e.g. incidence of street food borne diseases, types of diseases reported, types of disease causing foods, causes for non-reported cases etc.). A study could take departure in reported food poisoning cases at hospitals but also be conducted among customers in the street not reporting to hospital. Valid information is naturally very difficult to obtain because of recall bias, unknown causes of diseases etc. but a rough estimate of 'the street food factor' in transmitting food borne diseases would be very useful when designing targeted hygiene promotion strategies in the future.

5.3 Discussion of future perspectives of the street food sector

As described earlier, urbanisation processes rapidly changes traditional nutrition and eating patterns and street food is by now an important part of urban lifestyles. The street food sector has also had large impacts on urban living and urban societies creating employment and income potential for thousands of people inside the sector as well as in related economies such as the peri- and urban agriculture. With the prospect of the sector growing even more in the years to come some of these trends are worth reflecting upon.

Urbanisation and changes of nutritional patterns

This study showed that street food and fast food in particular is extremely popular and a dish with some social status attached to it signalling some wealth and an urban modern lifestyle. It was also clear that people pay greater attention to such social aspects of nutrition than the actual nutritional contents of foods. But such changing dietary patterns from traditional foods to higher reliance on street foods bring into question the nutritional quality of street foods: Does it hold sufficient nutritional value to ensure health in the urban population? FAO evaluations of studies from across African, Asian, and Latin American countries (FAO 1997) indicated that the eating of a combination of street foods do in fact provide consumers with adequate opportunities to meet daily nutritional requirements at an affordable level. And studies from Nairobi (Van t'Riet 2003), Nigeria (Otungo 1995, 1999) and Ghana (Maxwell 2000) showed that street foods sufficiently covered substantial parts of energy and nutrient requirements for the urban dwellers.

It is also known that a shift in the profile of the urban diet from one that is deficient towards richer in animal protein compared to their rural counterparts is happening, ensuring urban people a more balanced diet (Popkin 2000). But worrying trends enhanced by the intake of street foods can also be identified: urban dwellers have a considerable higher intake of saturated and total fat and sugar and lower intakes of fibre. Combined with a more sedentary lifestyle in urban areas an urban diet increases the risk of obesity and related chronic diseases (Popkin 2000). Fouéré et al. (2000) also

warned that a diet based on street foods may be lower in nutritional value since fresh legumes are often eliminated from the daily diet and consumption of leftovers and processed food items is higher. This issue is highly relevant in developing countries and for the Ghanaian context where a large and rising portion of the population is now overweight (Popkin, Akosa 2006). Furthermore, in Ghana even the traditional Ghanaian diet holds small amounts of micronutrients and increasing amounts of fats, refined foods and sugar (Akosa 2006). Hence, street foods in Ghana indeed secure the survival of many but an indication of an unbalanced urban diet is also a relevant issue. The study by Henseler (2005) indicated that consumption of lettuce seems to be on the increase in the street food sector and this and the study of Olsen (2005) indicated that awareness of the benefits of consuming fresh vegetables does exist in the population who hold high expectations to health benefits from consuming these. Hence, using and selling fresh vegetables in street food can be seen as a positive trend to counter the development of an unhealthy urban nutritional pattern and should be encouraged.

Urban agriculture

This study showed that people in general have low awareness of the production conditions of urban grown crops and far from all people take ecological concerns such as contents of pesticide residues or faecal material in foods into account when they purchase or prepare foods. Furthermore, this and other studies of street food in Kumasi (Olsen 2005, Henseler 2005) have identified insufficient standards of cleaning lettuce to be a risk factor and studies among Accra and Kumasi vendors also found salads and lettuce to have very high levels of faecal contamination (Mensah et al. 2003, Amoah et al 2006). Research into urban farming of these vegetables in Kumasi and Accra has identified several sources of faecal pollution of vegetables related to farming (waste water irrigation) as well as post-harvest practices (washing of vegetables in waste water etc.) (Keraita et al. 2003). With the rapidly increasing consumption of lettuce in the street food sector these findings are worrying. Teaching vendors safe cleaning practices of lettuce it therefore important to ensure safer street food. However, more important is probably to address the overall causes for contamination stemming from urban development and derived intensification of agriculture and urban food production. It is positive and highly necessary that urban agriculture now constitutes an important complement to rural supplies of foods for the growing urban societies, but the application of improperly or untreated waste to crops and the exposure to air, water, or land pollution are increasing and relevant public health concerns (Mougeut 2000). Apart from lettuce contamination many other risks in the street food sector can thus be identified stemming from urban agriculture practices. It therefore makes little sense to separate the risks from contaminated vegetables and cleaning lettuce from the broader underlying causes of contamination. The general need to keep all vegetables and meats clean and safe for consumption must therefore be in focus and vendors and customer must be taught how to choose safe crops. It also includes continuous intensive research and actions taken to ensure safe urban agriculture and food production.

Children and street food

Children and mothers have been identified as particularly vulnerable to changes of urban family patterns and lifestyles (Maxwell 2000) and children are a high-risk group more susceptible to food borne infections than adults (WHO 2002). Malnutrition increases the risk of such infectious diseases (Stephens 2000) and even small improvements and deteriorations of the nutritional quality of children's food can therefore in- or decrease their micronutrient intake and affect their health (FAO 2006). Intake of street foods might therefore play a particular important role on the health status and development of urban children.

The Accra nutrition study found the lowest nutritional status among children from single headed households engaged in street vending (Maxwell 2000) and pointed out that one reason was mothers having less time to cook at home and children being fed with or given money for street foods. Similar trends have been highlighted in other studies: Another Accra study highlighted serious health problems when it found street food consumption to be a predictor for children diarrhoea and measured higher levels of contamination in street foods given to these children compared to home cooked foods (Mensah 2002). In households headed by working mothers breakfast was found often to be eliminated and children instead given money to buy street food on the way to school (Fouéré et al 2000) and in Ghana many mothers' prefer the low-energy and low-nutrient porridge *koko* sold in streets as weaning food for babies instead of preparing approved weaning meals at home (Colecraft et al. 2003, Maxwell 2000). Furthermore, in many African countries it is common practice that schools assign street vendors to sell food to students and studies from Tanzania (FAO 2006), Mali, Niger and Benin (Chauliac et al. 1996) have all shown vendors to be the prime source of students' food during school days.

Hence, thousands of children rely on street foods and potential health dangers exist for them if they or their mothers do not know how to choose safe and nutritional street foods. But are children actually able to make safe and nutritional street food choices on their own? In Ghana it was found that many children spend the food money on candies and other foods of low nutritional value (FAO 2006) and the Tanzania study showed that most snacks and meals available for children at school to be grossly deficient of micronutrient with low use of vegetables and fruits (FAO 2006). In the same study 17% of the children indicated that they did not know if foods were safe and 59 % actually stated that foods were probably not safe but felt compelled to buy them anyway (FAO 2006). The studies from Mali and Benin also found that children based their street food purchasing on practical criteria such as taste and quantity. Only 1 out of 6 children assessed the hygiene. Instead children rejected vendors out of emotional reasons (Chauliac et al. 1996). Together these findings draw a picture of the urban society creating difficult situations for children to obtain an everyday diet of sufficient quality since they have low possibility to assess food safety and nutritional quality and hence to avoid risk of food contamination, disease and malnutrition. Children also have low authority to demand safe food from vendors and therefore entirely depend on adults and vendors to ensure safe

foods. The trend towards children consuming more street foods therefore creates a potential threat for child health.

However, important positive social trends must be taken into the equation; The income from vending street foods in urban areas provide thousands of mothers with means to send their children to school, take them to health care facilities and to buy or cook regular meals. Hence, many children are ensured a reasonable diet and health care due to the huge socio-economic spin off from the street food sector. To conclude, it is of the greatest importance to continuously monitor the nutritional effects of street food and the nutritional status of the urban child from low-income groups should indeed be particularly carefully observed.

Concluding remarks on future perspectives in the street food sector

In chapter 4 several suggestions for enhancing the hygienic quality of street foods were highlighted. The above perspectives add a few potential key target groups for future hygiene promotion; Parents, schools and other authorities in contact with children are in a strong position to influence and demand nutritional and hygienic food quality served to children and must take co-responsibility to enhance quality of street foods for the sake of children's health. Furthermore, the people involved in urban agriculture must become aware of their potential to enhance the quality of foods produced, harvested and sold from their hands. Research into safe crop production methods can support farmers etc. in doing so.

6. Conclusion

The socio-economic importance of the street food sector

Due to changes in lifestyles and living conditions in urban areas, vast numbers of urban dwellers now depend on street foods as a daily source of food. The street food sector therefore offers an enormous positive income generating potential for thousands of vendors and their families in urban areas of developing countries around the world. In addition, the sector now produces a huge socio-economic spin-off in related economies such as the peri-urban and urban-agricultures. Hence, the street food sector is necessary and shows prospective for urban development.

But street food is also known to be of rather low hygienic quality, jeopardizing the health status of thousands of urban dwellers. Town authorities are therefore struggling to control and ensure safe street foods. But in Kumasi and many other towns the street food sectors have grown explosively during the last decade and it now seems too far-reaching for authorities to handle on their own with present methods. The street food sector is therefore an increasingly important point of entry for public health and hygiene interventions and emphasis on research and studies such as this one should be enhanced to gain more knowledge on street food hygiene and help develop suitable interventions.

Findings of this study

The main objective of this thesis was to investigate the practices and perceptions of food quality, food safety and hygiene among street food vendors and their customer's in urban Kumasi and to suggest viable future hygiene initiatives. Qualitative data was collected during a 3 months field study in urban Kumasi, Ghana. The field activities included extensive participatory observations and interviews with 8 case vendors, general observations on various markets, urban farms and vending places around Kumasi. Furthermore, interviews and focus group discussions with street food customers and interviews with various key-informants were conducted. The data was analysed using a multi-dimensional approach focusing on the five main dimensions of social, hygienic, nutritional, aesthetic and functional dimensions of food quality.

This thesis has made it clear that food safety and hygiene is not the sole concern for vendors and consumers when evaluating street food quality. A range of quality dimensions influence their perceptions of street food. In this study choosing a vendor was highly influenced by *functional* factors such as price, availability and accessibility. But assessing food quality was mostly a matter of *neatness* of the vending premises, the neatness of the vendor and the presentation of foods. Furthermore, putting personal *trust* in a known vendor seemed to replace customers concerns of food hygiene to some extent – also when it was not expected from vendors to have knowledge of food risks. Instead trust seemed to constitute an important social attachment for customers. Hence, neatness and trust were ruling criteria for food quality.

'Neatness' turned out to incorporate *aesthetic* as well as *hygienic* aspects related to concerns of general cleanliness, orderliness, beauty as well as moral purity. Hence, in accordance with findings of Mary Douglas, reasons for valuing hygienic food behaviours were clearly driven by multiple aspects of social, moral and aesthetic motivations such as social esteem, attractiveness, and acceptance. Efforts to avoid and eliminate moral dirt and social contamination along with biological dirt are therefore indeed very evident among street food vendors and customers in Kumasi and neatness thus functions as a useful parameter for everyday dirt avoidance behaviours, intuitively taking a variety of food related risks into account.

But observations in the street food sector of Kumasi showed quite obvious distinction between hygienic behaviours on the *front stages and back stages* of food vending sites and it was clear that vendors unfortunately rarely extent hygiene concerns to include practices on the back stages of food vending – while efforts were great when presenting one self and the food. Dirty kitchens and lack of hand washing were therefore often encountered, even though most vendors had sufficient knowledge to avoid related risks of diseases transmission. The reason for this *hygiene puzzle* seem to be that vendors put substantial emphasis on the aesthetic and immediate visible impression of the vending environment and less on avoiding in-visible sources of dirt such as germs, bacteria and other pathogens.

This elucidates how strongly hygiene practices are formed and determined by *social interactions* and relationships between people and it also reminds us that food safety and hygiene is spun into and sometimes overruled by the hundreds of other everyday concerns, which for vendors include concerns of maximizing the impression conveyed to their customers. For customers the price and availability often had the last saying. Hence, vendors and customers operate with quite *pragmatic logics* sometimes incorporating hygienic concerns into their actions - and sometimes not.

Implications for future hygiene promotion interventions

On the basis of these findings it was possible to suggest several strategies for future hygiene promotion initiatives. First of all it is crucial to understand that it is not a sufficient strategy to educate vendors only on risk factors and vendors must not just be blamed for their lack of hygiene practices. Instead initiatives should recognize and build on the many underlying social, cultural and moral motivations for food hygiene which vendors already express in many aspects of their everyday life. Secondly, creating enabling environments by involving vendors actively in hygiene promotion within their own business networks seemed like a promising strategy. This can build upon existing trusted business relationships between vendors and help in developing self-regulatory and participatory control mechanisms in the street food sector. This will offer an important supplement to the restrictive control strategies exercised by town authorities today and help curb the negative attitude towards the sector.

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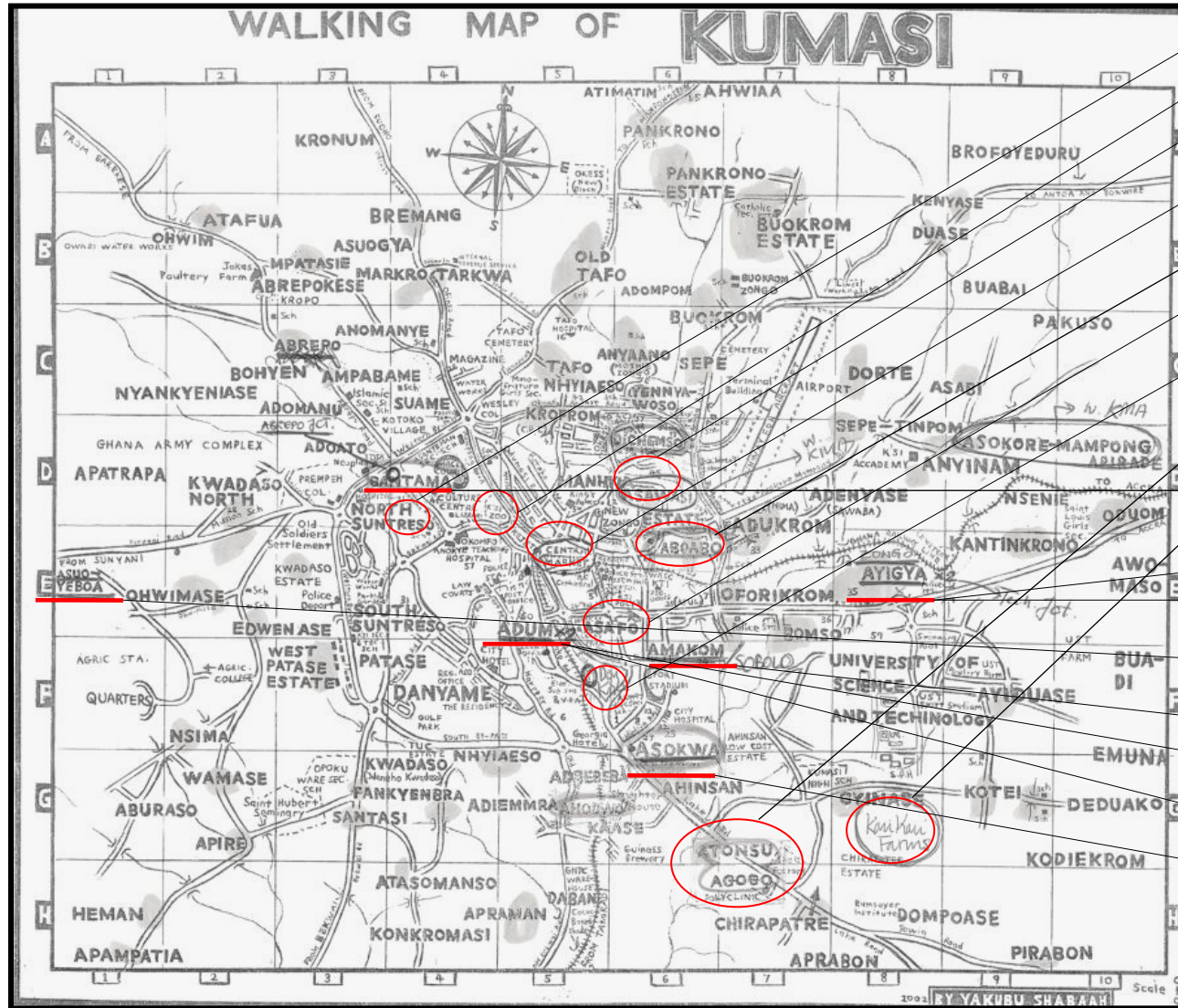
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ANNEX 1: Map of Kumasi with indications of observation spots and vendors' locations



Observation spots around Kumasi:

Restaurant for Focus Group Discussions in Bantama

Kejetia: The MAFFAG vendor network meeting spot

Asawasi Sub-metro KMA Office

Central Market

Inspection rounds with KMA in Aboabo

Asafo vegetable market

Don Kirk Vegetable market for whole sellers

Road side market and food stands in Atonsu Junction

Kari-kari vegetable farms

Vendors' locations:

Bantama: Vendor 5; Be Didi Fast Food

Ayigya/Campus Junction: Vendor 6; Agingo Fast Food

Ayigya/Campus Junction: Vendor 7; Wakye food stand

Asuayebaa: Vendor 4; Mario's Fast Food

Sobolo: Vendor 1; King's Fast Food

Adom: Vendor 3; Adom Fast Food

Adom: Vendor 8; Wakye food stand

Asokwa: Vendor 2; Royal Fast Food

ANNEX 2: Specified timeline for fieldwork activities

Calendar time	Activity	Activity, specified
March, Week one	Exploratory and introductory observations at farmers, markets and street vendors. Focusing fieldwork and concept note.	Observe food vendors and customers at a number of food stands in Kumasi to identify public health related hygiene practices (i.e. washing and cleaning vegetables, hands and utensils, water sources and sanitation facilities etc.) Visit several urban lettuce farmers. Observe market structures in central Kumasi.
March, week two	Contacts to local vendor networks and vendors + arranging field stay with farmers	Identify 8 vendors for in-depth observations. Develop semi-structured interview guides for vendors. Begin observations at selected vendors. Arrange field stay with urban farmer.
March, week three	- Field stay: 3-4 days of participatory observations with urban farmers in Kumasi	Observe and participate in farm routines, cooking routines in home, farmers' wives involvement in farm work, Interview farmers and farmers' wives. Observe life chain of lettuce from ground to market to vendors.
End March- mid April	- Participatory observations and interviews with vendors continued. - Arrange in-depth interviews with vendors	Themes for interviews: knowledge and attitudes on food quality, hygiene and safe food.
Mid April – end April	- Conduct vendor interviews and continue participatory observations. - Develop semi-structured interview guides for costumers. - Conduct street interviews with app. 20 street food customers.	Themes for customer interviews: knowledge and attitudes on food quality, street food sector, hygiene and preferences and choice of vendor and safe foods.
Beginning May - mid May	- Plan and conduct 2-4 focus group interviews w. vendors - Plan and conduct 2-4 focus group discussions w. costumers. - Finish vendor interviews and continue participatory observations. - continue street interviews with street food customers.	FGD with vendors based on the findings, topics and discussions identified during participatory activities. NB: activity not conducted: <i>It turned out that most vendors could not easily leave their jobs to attend FGD's and arranging vendors to meet simultaneously was also very difficult. Furthermore, the only official way of contacting and recruiting street vendors is the MAFFAG network. However, MAFFAG has been involved in research projects for some time and vendors been recruited several times for FGD's and interviews. Hence, the attitude among vendors towards research projects and researchers was rather negative. Instead, a knowledge sharing workshop at the end of the field study was added to the field work activities, for the involved vendors to gain from the results of the various research projects.</i> 2 FGD's with customers based on findings, topics and discussions identified during street interviews.
Mid may- end May	- Finalizing data collection and collect additional local literature. - Knowledge sharing workshop w. vendors in MAFFAG - Plan and conduct visit at Maggie branch in Kumasi - Say goodbye to all vendors and staff	Last observation sessions at vendors Develop and conduct knowledge sharing workshop with IWMI and research staff; find facilitators, develop guidelines for them, develop role plays and presentations. Visit Maggie branch in Kumasi to find out which vendor related activities they host, plan and conduct within Maggie.

ANNEX 3: Specified observation schedule

Vendor no. / stand	Vendor and other staffs (Sex, age)	Type of food vended	Observation sessions	Activities attended
1. King's Fast Food in Sobolo	1 (F, 29) + occasionally assisting sister (24)	- Fried rice w. chicken and salad	<u>Visited 8 times, 4 observation sessions:</u> 14 th March: 7 am. - 18 pm. 17 th March: 15 – 20 pm. 27 th March: 13 -15 pm. 20 th April: 13 -18 pm.	- Shopping on the central market - Participated in parts of cooking routines - Observations of cooking, preparation and sales routines - Visited vendor's accommodation - Informal interview with vendor and ass. sister - Formal recorded interview w. vendor
2. Royal Fast Food in Asokwa	1 (M, 37) + 1 full time assisting brother (22)	- Fried rice w. chicken and - Spring rolls	<u>Visited 6 times, 5 observation sessions:</u> 27 th March: 15 – 17.30 pm 31 st March: 15 – 19 pm 11 th April: 15 – 18.30 26 th April: 18-21 pm. 29 th May: 13- 17 pm.	- Participated in cooking preparations - Visited used water and sanitation fac. - Observations of cooking, preparation and sales routines - Informal interviews with staffs - Formal recorded interview w. vendor - Interaction and interviews w. customers
3. Adom Fast Food in Adom	1 (F, 37) +1 full time worker (F, 28)	- Fried rice w. chicken - Banku w. chilli paste, vegetable stew and fried fish - Fried plantain w. vegetable/meat stews and fried fish	<u>Visited 10 times, 8 observation sessions:</u> 15 th March: 12 -16 pm. 18 th March: 9.30 am. – 13.30 pm. 29 th March: 16 - 8.30 pm. 12 th . April 15-18 pm. 20 th . April: 15.30 – 16.30 24 th . April: 12.30-15.30 pm. 6 th . May, 12.30-16.00 pm. 20 th May: 14 – 16 pm.	- Shopping on the central market - Participated in cooking preparations - Visited used water and sanitation fac. - Observations of cooking, preparation and sales routines - In church with vendor and family - Informal interviews with staffs - Formal recorded interview w. vendor - Interaction and interviews w. customers and nearby shop owners
4. Mario's Fast Food in Asuyeboa	1 (M, 25) + 1 full time worker, Cousin (M, 17) + student assistant (M, 19)	Fried rice w. chicken and salad	<u>Visited 3 times, 3 observation session:</u> 3 rd . April: 11 am. – 13.30 pm. 4 th . April: 9 am. – 14 pm. 10 th April: 15 – 18 pm.	- Visited used water and sanitation fac. - Visited staff accommodation - Observations of cooking, preparation and sales routines - Informal Interview w. staffs - Formal recorded interview w. vendor
5. Be Didi Fast Food in Bantama	1 (M, 33) + 1 co-vendor (M, 23) + 2 full time workers (1 M, 20 and 1 F, 22)	Fried rice with chicken and salad	<u>Visited 10 times, 9 observation sessions:</u> 5 th April: 9.30 – 14 pm. 8 th April: 10.30 – 14.30 pm. 19 th . April 14.00- 15.30 pm. 22 nd April. 15-16 . 23 rd April: 17.30-20.30. pm. 3 rd . May: 17-21 pm. 6 th . May: 16.30 – 20 pm. 14 th . May: 12 – 16 pm.	- Visited used water and sanitation fac. - Participated in cooking preparations - Observations of cooking, preparation and sales routines - Informal interviews with staffs - Formal recorded interview w. Co-vendor in charge - Interaction and interviews w. customers - Interaction and informal talks with other nearby

ANNEX 3: Specified observation schedule

			28 th . May: 12 – 16 pm.	street food vendors
6. Aingo Fast Food in Ayigya/ Campus Junction	1 (M, 21) + 1 school boy as occasional assistant (14). Mid-May; New vendor in charge (M, 24) + new assisting school boy (13).	Fried rice w. vegetable sauce, chicken and salad	Visited 13 times (9 w. first vendor, 4 w. new vendor), 9 observation sessions: 6 th April: 10 – 12.30 pm. 9 th April: 10 – 14 pm. 18 th . April, 15 – 19.30 pm. 22 nd . April: 19 – 21 pm. 24 th April: 19-21 pm. 25 th . April: 14-17 pm. (new vendor) 29 th . April, 15-17 pm. (new vendor) 22 nd May, 17-19.30 pm. (new vendor) 26 th . May: 15-17 pm. (new vendor)	<ul style="list-style-type: none"> - Observations of cooking, preparation and sales routines - Participated in cooking preparations - Visited used water and sanitation fac. - Interaction and informal talks with other nearby street food vendors - Informal Interview w. staffs - Formal recorded interview w. first vendor - Interaction and interviews w. customers
7. Wakye food stand in Zongo (kitchen) and Ayigya/ Campus Junction (vending place)	1 (F, 47) + 6 full time workers (all F under 25 yrs)	Wakye, meat and vegetable stews, salads, eggs, spaghetti, boiled yam and rice, fish, chicken and beef.	Visited 8 times, 5 observation sessions (2 in kitchen, 4 at vending place): 25 th . April 15-17 pm. (sale) 28 th . April 10.30 – 13 pm. (cooking) 29 th . April, 8.30– 5 pm.(cooking and sale) 2 nd . May: 14-16 pm.(sale) 3 rd . May: 15-17 pm. (sale)	<ul style="list-style-type: none"> - Visited vendors accommodation - Observations of cooking, preparation and sales routines - Visited used water and sanitation fac. - Informal Interviews w. 2 staffs and vendor - Formal interview w. vendor - Interaction and interviews w. customers
8. Wakye food stand on the Roma Hill (kitchen) and Adom (vending place)	1 (F, 28) + 3 full time workers (all F under 20 yrs.)	Wakye, meat and vegetable stews, salads, eggs, spaghetti, boiled yam and rice, fish, chicken and beef.	Visited 7 times, 5 observation sessions (2 in kitchen, 5 at vending place): 19 th . May: 7 -12 am. (cooking and sale) 20 th . May: 9- 14 pm. (cooking and sale) 23 rd . May: 13 – 17 pm. (sale) 24 th . May: 12.30-17 pm. (sale) 25 th . May: 14 – 17.30 pm. (sale)	<ul style="list-style-type: none"> - Observations of cooking, preparation and sales routines - Visited used water and sanitation fac. - Informal Interviews with staffs and vendor, and vendors husband - Formal recorded interviews w. 1 staff and vendor - Interaction and interviews w. customers

ANNEX 4: Vendor observation guide

Practical information: For each observation session, location, time interval, app. number and types of customers, main events, discussions etc. is noted down.
Stand facilities: <ul style="list-style-type: none">- Water source (availability, distance)- Toilet facilities (availability, distance, hand washing facility, soap)- Presence of dirt, dust, ants, flies, animals, children etc.- Condition of stand structures and facilities (materials, flooring, cleanliness, utensils etc.)
Vicinity facilities: <ul style="list-style-type: none">- Condition of immediate environment (open gutters, drainage, garbage, etc.)- General description of area and stands position (shops, streets, social standards and conditions, public or private sanitation facilities, relations with other shop owners etc.)
Food hygiene practices: <ul style="list-style-type: none">- Preparation of dishes (how, when, who, where)- Treatment of lettuce / other vegetables (procedures of washing/cleaning, use of salt, vinegar, lime etc.)- Storage of food / vegetables / lettuce (where, how long, temp, covering)- Handling, serving and packing (procedures and materials, use of utensils, hands, thongs, plastic bags or boxes etc.)- Practice of keeping food hot and reheating before sale (procedures and facilities, time, app. temperature)- Separation of raw and cooked foods and use of utensils for raw and cooked foods (chop boards, pans, knives, cloths)- Handling of leftover food (what and when is food kept/disposed)- Washing of utensils (how, when and where)- Quality of water and raw materials used (Source and quality of water used for cooking/washing etc. quality and origin of meat, vegetables, and other food items)
Vendor's personal hygiene and practices: <ul style="list-style-type: none">- Hand washing (when, how often, in which water)- Cleanliness of clothes, hands, fingernails, general appearance while cooking /vending- Open wounds, health of vendor- Use of apron, head cover- Unhygienic behaviour while vending food (nose blowing, child care, coughing, touching foodstuffs)- General behaviours and manners towards customers, suppliers, business relations etc.
Customers: <ul style="list-style-type: none">- Types of customers (age, sex, occupations, social class; students, workers, children, unmarried/married)- Vendor-customer interaction; questions/concerns about the food, hygiene etc.- General customer behaviours during purchasing

Annex 5: Questions guide for vendors

Demographic data and background of food vendor/staff	<p>Age? Main occupation?</p> <p>Ethnic group? Religious affiliation?</p> <p>Place of residence?</p> <p>Highest educational level?</p> <p>Are you married? Do you have children?</p> <p>Other dependants?</p> <p>How long have you been a vendor/staff? /vending here? / vending elsewhere?</p> <p>Why did you start in this business?</p> <p>What types of dishes do you cook and serve?</p> <p>How is the business running? What are the major challenges for you?</p> <p>What are your future plans?</p>
Purchasing procedures	<p>Where and how often do you go to buy vegetables/meat etc.?</p> <p>Where and with who do you do buy? Why this particular supplier?</p> <p>(Probe for details on reasons given)</p> <p>How did you establish the contact with your suppliers?</p>
Quality perceptions	<p>When you buy the vegetables or the meat etc. how can you decide if it is of good enough quality?</p> <p>What are the most important features of the vegetables/meat etc. for you?</p> <p>(Probe for: looks, freshness, size, smell, colour, origin, seller, price etc.)</p>
Treatment practices of lettuce/other vegetables	<p>After having purchased the vegetables, what do you then do?</p> <p>(Probe: How is it cleaned, treated, prepared, served, presented and stocked?)</p> <p>Why do you worry to clean the vegetables?</p> <p>What are the most important reasons for cleaning it in your opinion?</p> <p>(Probe for differences of treatment between lettuce, spring onion and other vegetables, diseases, customers' preferences etc.)</p>
<p>Awareness of food safety, contamination and health risks</p> <p>(Vendors food safety knowledge and perceptions)</p>	<p>Can you tell me a little about what you do in your shop to make sure that your food is safe to eat for your costumers?</p> <p>In your opinion, what are the most important things to care for regarding food safety, for a vendor like yourself?</p> <p>How can your customers be certain that your food is safe to eat?</p> <p>Do you do anything in particular to show the customers that your food is safe?</p> <p>Are there any safety practices that you would do differently if you had the opportunity?</p> <p>What are the differences between safe and unsafe food in your opinion?</p> <p>Are there any safety practices that are difficult for you to perform here? (Which and why?)</p>
Personal hygiene:	<p>What about the personal hygiene of a vendor? What is important in your opinion? (Probe for hair, clothes, nails, etc.)</p>
Hygiene of environment:	<p>What about the hygiene of the environment of the stand? What is important in your opinion?</p>
Risk perceptions on food safety	<p>There are many ways that germs can be introduced to food, can you tell me some of them?</p> <p>What can happen if vegetables are not cleaned?</p> <p>Do you know of any diseases that can come from unsafe foods?</p> <p>(Probe: what diseases, why, what happens to people, etc.)</p> <p>Have you ever had any health problems related to food yourself?</p> <p>(probe specifically for stomach problems like pains, intestinal worms, diarrhoea, vomiting after taking food etc.)</p> <p>What can be done to avoid such situations?</p> <p>Is it possible that the vendor him self can be a source of contamination? (why and how?)</p>
Knowledge on urban farming practices and water sources:	<p>When you buy lettuce do you then enquire about the farming practices used when producing the lettuce?</p> <p>Do you know about the water sources used to irrigate the lettuce you buy?</p> <p>(Do they know/care etc.?)</p> <p>Have you heard of any other irrigation methods? (Probe for waste water, etc.) How do you value these methods?</p>

Annex 5: Questions guide for vendors

	Do you perceive any of the farming practices involved in the vegetable farming to be harmful to customers?
Consumer's awareness of food safety	<p>Do any of your costumers make enquiries about the food safety here at your shop? (if any, what kind of enquiries?)</p> <p>Do any of your customers make enquiries about the source and quality of the vegetables/meat? (What kind of enquiries?)</p> <p>What are the reasons they ask you, you think?</p> <p>Do your customers make enquiries about how you treat the lettuce? (What kind of enquiries?)</p> <p>How do you react when they ask you these questions?</p> <p>(Probe: Ask more into details on the reactions given)</p>
Vendors-customer interactions	<p>Have you heard about any vendors who treat the food and the vegetables differently than you do?</p> <p>Why do you think they do so?</p> <p>Have you heard about any vendors where the costumers complained about their food?</p> <p>What kind of complains did they have?</p> <p>Have you had any costumers complaining yourself?</p> <p>How do you deal with these situations?</p> <p>Do you ask other vendors about these things?</p> <p>How do they react?</p>
<p>Channels of information and knowledge on safe food practices: (Media, campaigns, courses, customers, peers, organisations, associations, authorities, other)</p> <p>Health inspections:</p> <p>Staff education:</p>	<p>Who taught you to cook in this way that you do?</p> <p>How did you learn about it?</p> <p>From where can you get information on food safety? (probe: Media, radio, associations, family, other vendors etc.)</p> <p>What kind of information and advice do they give in the radio, in the tv etc.?</p> <p>Do you talk about business with other vendors?</p> <p>(Probe for: talk about food safety issues, how to prepare safe food, things?)</p> <p>Did the health inspections ever visit your stand?</p> <p>What did they do? What did they say?</p> <p>Did they give you any advices? (Which ones?)</p> <p>How did you experience the visit?</p> <p>Did you change anything after their visits?</p> <p>What qualifications should your staff have?</p> <p>How do you choose them? (Probe for medical conditions, cooking qualifications, education etc.)</p> <p>What do you teach them in your kitchen?</p> <p>How do you like them to behave when they are cooking?</p>

Annex 6: Customer interview guide

Consumption patterns: <i>Research question:</i> How are the patterns of consumption among consumers?	How often do you eat street foods? What kind of food and what kind of places? How do you eat the food? (at the site/ take away/home) Do you reheat food at home? Do you prefer it cold/hot? (Probe for perceptions of hot and cold foods)
Criteria for choosing a street food vendor: <i>Research question:</i> How do consumers choose street food vendors? What criteria do they express?	What do you look for when you choose a vendor? Do you eat at the same vendors, or do you shift? (Probe for reasons) What preferences do you have when you choose a place to eat? Probe for: taste, freshness, cleanliness, convenience, distance, time, price, safety, reputation of vendor, personal relation with vendor, credits, food on display)
Eating street food or eating at home: <i>Research question:</i> How do they perceive street foods compared to eating home cooked food?	How would you describe the street food in comparison to the food you eat at home? (Probe for: quality, taste, safety, family, prestige, social aspects etc.) For what reasons do you eat outside your home?
Food safety perceptions and behaviours: <i>Research question:</i> What risk concerns and awareness towards food hygiene and food safety do the consumers express when they eat street food? And how are they expressed?	Have you ever fallen ill from eating a certain food yourself or have you heard about anybody? (Probe specifically for: diarrhoea, running stomachs and stomach pains) Why do you think it happens? What can be done to avoid it? What can the consumer do to avoid falling sick? What can the sellers do? What is a safe place to eat for you? Are there any foods that you do not buy on the streets because of the food safety? Do you consider any foods to be more unsafe than others? Which diseases can you get from eating street foods? (Probe for sources of transmission; the vendor, the surroundings, etc.)
Knowledge on food safety and hygiene: <i>Research question:</i> Where do the customers get food risk knowledge from and what do they see as most important channels of information?	Where did you learn these things about food safety? How did you come to know? Who could you imagine being involved in promoting safer food hygiene for the public in Kumasi? (How?)

Annex 7: Guide for Focus group discussion with street food customers

Introduction at recruitment:

“Good evening,

My name is Thilde and I am currently doing research on street foods in Kumasi for my studies in Denmark. Today I am doing a group discussion with people like you who buying street food and I would therefore like you to join the group. It will take place in this restaurant and it will take around one hour. I can only offer you drinks, I can not pay you any money for participating, but I would be very grateful if you could join the group and share your views and opinions on consuming street food”

All participants are asked to introduce themselves by stating their names, age and educational level. Permission to record the discussion session and make sure that all participants understand they will be anonymous in the research paper.

Consumption patterns:	<p><u>Intro question:</u> I have noticed that there are so many street food vendors in Kumasi. Can you start by telling me some reasons why so many people eat street foods in Kumasi?</p> <p><i>All other questions as in guide for individual customer interviews</i></p>
Perceptions of eating street food/eating home cooked food:	<p><i>Same questions as in individual customer interviews</i></p> <p><u>Vignettes:</u> I met this man who said that a pastor can not eat street foods, why do you think that is?</p> <p>I met this customer who was a business manager – he said that he did not feel comfortable eating at a street food stand – why is that?</p> <p>I met this married man who said that he only bought food for his children – he would eat his wife’s food - Why is that? (Probe: do they do the same?)</p> <p>How do you feel when you are buying food from a street food vendor? (Probe for: does it very quickly, feel uncomfortable when waiting, looks forward to meet the vendor, likes to spend time at the vendor, does not like to stand and wait at the stand etc.)</p>
Criteria for choosing a street food vendor:	<p><i>Same questions as in individual customer interviews</i></p> <p>Many customers have told me that they look for ‘Neatness’. Can you explain what is a neat place - and a neat vendor? What is ‘neatness’ to you?</p>
Food safety perceptions and behaviours:	<p><i>Same questions as in individual customer interviews</i></p> <p>How can consumers like your selves do to make sure that the food is safe for consumption? (Probe for: look out for facilities, ask/educate the vendors, overlook preparations and cooking? knowing the vendor personally etc.)</p> <p><u>Vignette:</u> I heard about this one customer who used to give vendors advice about how to cook and serve. Do you do this? Do customers usually do this? (Probe for reasons; why/why not)</p>
Knowledge on food safety and hygiene:	<p><i>Same questions as in individual customer interviews</i></p> <p>Where can people like your selves learn more about food safety and food hygiene? (Probe for: the media, health campaigns, vendors, schools, other customers, authorities, medical staff etc.)</p> <p>What are the best ways to learn more?</p>